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In This Issue...
Environmental Awards



US Army Corps of Engineers®

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When Lake Wilson became infested with
salvinia molesta the Army came to the
rescue; the Corps of Engineers, 25th
Infantry Division (Light), and the
Hawaii National Guard worked together
to get it cleaned up.
Photo by Michelle Cain.



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3 Letter from the Editor

Environmental Awards

- 4-8 Army highlights top environmental programs *by US Army Environmental Center*
- 8 FY03 ACOE winners recognized
- 9 White House Closing the Circle awards announced
- 9 USAEC lauded for land conservation

Environmental Successes

- 10 Celebrating Army environmental victories *by Deborah Elliott*
- 10-11 Deconstruction at Fort Ord *by Dana Finney*
- 12 Fort Bragg sets new EPAS record *by Lynda S. Pfau*
- 12-13 Fort Drum's 10th Mountain Division helps battle acid rain *by Karen J. Freeman*
- 14-15 Aberdeen remediation project *by Jerry L. Norris*
- 15-16 Mobile District provides unique NEPA support to RCI *by Donald M. Conlon*
- 16-17 Army team leads the cleanup of Lake Wilson's "green monster" *by Douglas MaKitten*
- 18 U.S. Army, Europe protects natural habitats *by Wolfgang Grimm*

Automation

- 19 Army Environmental Program implements E-business using AKO *by Kathleen Bartholomew*
- 20-21 Army implementation of Environmental Management Systems *by David P. Giffin*
- 21 New support services contracts available to all CADD GIS Technology Center partners
- 22 New web site for Army solid waste and recycling *by Stephen Cosper*
- 22-23 Army combines restoration reporting systems
- 23 Automated template for solid waste plans *by Stephen Cosper*
- 24 DENIX WebSearch: full-text searching offers powerful tool *by Todd Littell*

SDD

- 25 Change in Sustainable Design and Development (SDD) policy
- 26-27 Fort Bragg takes sustainability framework beyond boundary lines *by Lynda S. Pfau*
- 27 Little Rock District embraces green design *by Laura Cameron*

Installation Management

- 28-29 Smart landscaping practices save water *by Richard Scholze*
- 29 Non-native invasive plant species pose challenge *by Heidi R. Howard*
- 30-31 Assessing water system vulnerability
- 31 Constructed wetlands for wastewater treatment *by Bob Fenlason*
- 32-33 Temperature Data as an Energy Conservation Tool *by Troy M. Hull*
- 33 Documenting pollution prevention measures *by Deborah Curtin*
- 34 Reduce demolition waste by recycling: new guidance for DPWs is here *by Tom Napier*
- 35 Construction and development of effluent guideline proposed rule *by Emily Muraro*
- 35 New developments

Professional Development & Training

- 36 Environmental symposium "sets the stage" for the future *by Jean Skillman*
- 36-37 Real Property Master Planning training course revisited *by Jerry Zekert*
- 37 Southeast Regional Office (SERO) IMA holds Energy Managers Forum *by Dave Payson*
- 38-39 Installation Management Institute (IMI) Master Planning support *by Jerry Zekert*
- 39 NAD looking for new Planning Chief
- 39 Environmental publication seeks material
- 40 Civilian ATLDP recommendations move forward *by Joe Burlas*

People in the News.....

- 41 ACSIM engineer donates kidney to wife *by Alexandra K. Stakhiv*
- 42 Army intern finds her way *by Jean Skillman*
- 43 Digest profiles Robert A. "Rob" Snyder



LETTER FROM THE EDITOR



The environmental issue of the *Public Works Digest* is always a big issue, but this one has to be the biggest. There were several articles that had to be pulled at the last minute due to our 44-page space limitation. This was done based on date of submittal, prioritization and, most importantly, relation to theme. Unfortunately, for the same reasons, I cannot promise that they will be included in the next issue. Stay tuned...

As usual, my biggest contributor to the environmental issue was the Army Environmental Center at Aberdeen Proving Ground. Neal Snyder came through with all the articles he promised and then some. Not only did he and his staff provide the award stories, but many others sprinkled throughout this information-packed issue.

We are very proud to report on all the environmental awards the Army has received this year, to include: Secretary of the Army Environmental Awards, Secretary of Defense Environmental Awards, Closing the Circle Awards, Army Communities of Excellence Awards and The Nature Conservancy Awards. Please read all the articles on these deserving installation, organization, team and individual winners whose hard work made it all possible. Congratulations to all!

Many installations sent in articles about the successes they have had in the environmental arena. New technologies being implemented include a portable machine to strip leaded paint from siding at Fort Ord and Ambersorb columns used to treat plant discharge at Aberdeen Proving Ground. Battling the "green monster" at Lake Wilson in Honolulu and acid rain at Fort Drum make for a fascinating read.

All DPWs should note the substantial change to Sustainable Design and Development (SDD) policy. Effective immediately, all FY06 and future MILCON projects must achieve the gold level of SPiRiT and, to the extent possible, any ongoing designs must too. OACSIM and USACE were tasked to select 10 projects for SDD showcase status and the list appears on page XX. Also, Fort Bragg and Little Rock District tell us how they are "embracing" SDD.

CERL researcher Richard Scholze explains how installations can save water with smart landscaping practices. Some of the strategies he advocates include limiting areas of irrigation, using native landscape materials and planting wind barriers. Implementing just a few of these measures year-round can really make a difference in reaching water conservation goals. Also covered in the Installation Management section are several new Public Works Technical Bulletins recently completed by the Corps' Construction Engineering Research Laboratory. These offer guidance for non-native invasive plant species on Army lands for Western and Eastern United States, reducing demolition waste through reuse and recycling and selecting methods for reduction of demolition waste.

This is just a sample of what's inside this important issue on the environment. If you can't take the time to read it cover to cover now, save it for future reference. You'll be glad you did.

The theme for the July/August issue of the *Digest* is facilities engineering on Army installations. Facilities engineering, once a regular feature in the *Digest*, has been sadly neglected over the last few years, and I look forward to working with the Installation Management Agency (IMA), ACSIM and USACE folks to cover everything that you want and need to know in this broad area. The deadline for article submittal is 27 June.

Until next time...

Alexandra K. Stakhiv

Alexandra K. Stakhiv, Editor, *Public Works Digest* **PWD**



Army highlights top environmental programs

US Army Environmental Center

The Army and the Department of Defense recently named recipients of their highest honors for environmental stewardship.

Six installations and two teams received Secretary of the Army Environmental Awards for fiscal year 2002. Three of those winners went on to receive Secretary of Defense Environmental Awards.

Winning Army programs made strides in endangered species protection, historic preservation, waste reduction, environmental restoration and pollution prevention.

Their accomplishments include returning a species of wild turkey to its historic habitat, restoring a World War II defense outpost in Alaska, preserving one of the oldest active military bases in Texas, reducing landfilled solid waste by 40 percent in California and lowering pesticide use by 70 percent in Hohenfels, Germany.

Each year, professionals from around the world compete for Secretary of the Army Environmental Awards in natural resources conservation, cultural resources management, environmental quality, pollution prevention and environmental restoration. Judged by a panel of non-military and Army experts, award winners stand out as leading examples of how innovation and better business practices can move the Army beyond mere compliance, enhance its readiness mission and safeguard some of the nation's most pristine and biologically diverse ecosystems and valued cultural sites.

These winning installations, teams and individuals have brought unique accomplishments to the Army's environmental program. Yet, the foundations leading to their accomplishments are almost universal. They include dedication to supporting the military mission, sustaining the environment, and building strong partnerships at the local, state and federal level.

The U.S. Army Environmental Center guides the Army's efforts to increase readiness, improve the well-being of our soldiers, and enhance community relationships through sound stewardship of the environment. Working through the Army

headquarters' Director of Environmental Programs, the staff of the U.S. Army Environmental Center (USAEC) brings world-class expertise and innovative solutions to environmental stewardship challenges. As part of its mission, USAEC manages the Secretary of the Army Awards Program for the Office of the Assistant Chief of Staff for Installation Management.

The following eight articles about the Army's Secretary of the Army and Secretary of Defense Environmental Award winners help illustrate why they were selected. These articles were compiled by Eleanore Hajian, Deborah Elliott, Jean Skillman and Michael Dillaplain, Booz Allen Hamilton consultants supporting the U.S. Army Environmental Center Public Affairs Office at Aberdeen Proving Ground. For more information on the recipients of the 2002 Secretary of the Army Environmental Awards, please visit USAEC's Web site at <http://aec.army.mil>

NATURAL RESOURCES CONSERVATION (Army and DoD)

*U.S. Army Intelligence Center and
Fort Huachuca, AZ*

Bringing the Gould's wild turkey back to a portion of its historic habitat helped the U.S. Army Intelligence Center and Fort Huachuca, Arizona, a Secretary of the Army Environmental Award and a Secretary of Defense Environmental Award for Natural Resources Conservation.

At Fort Huachuca, home of the U.S. Army Intelligence Center, the Army manages 73,142 acres of land in support of military training and for public recreation. To maintain the beauty and integrity of this sensitive, high-desert environment, natural resources staff at Fort Huachuca have established many programs to protect endangered species, restore land, conserve water and reduce forest fire risks.

One of these programs, the Gould's Turkey Management and Restoration Plan for southeastern Arizona, successfully reintroduced the bird to a portion of its his-

toric habitat. Although plentiful in Mexico, Gould's wild turkeys have generally been absent from historic habitat in southeastern Arizona for more than a century. The fort also supports research into western box turtles, lesser long-nosed bats, Mexican spotted owls, and agave.

Water conservation is another strong component of natural resources management in the desert environment at Fort Huachuca and the National Training Center. Water reduction, recharge and reuse initiatives have lowered water use by nearly 50 percent since 1993. As part of these efforts, the installation replaced nearly 2,500 high-water-use fixtures with low-flow models (approximately 2,000 showerheads, 200-plus waterless urinals, 280 horizontal-axis washing machines and aerating faucets and Purell dispensers). In addition, the installation recently purchased a conservation easement through a partnership with The Nature Conservancy to prevent the agricultural pumping of 630 acre feet of water.

"Fort Huachuca and the U.S. Army Intelligence Center have developed a comprehensive effort to protect world-class biodiversity, especially through water conservation, groundwater recharge and the use of conservation easements to reduce water usage," said awards judging panel member William Millan, a senior policy advisory and Army liaison for The Nature Conservancy. "It is a good example of public-private partnerships that get the job of conservation done while accomplishing the military mission."

Additional accomplishments that earned Fort Huachuca its award include:

- Initiating the first deer hunt for disabled hunters in Arizona.
- Discovering rare barking frog populations on the installation.
- Lowering pesticide use by 64 percent in the last three years.
- Establishing an Integrated Natural Resources Management Plan that incorporates cooperative agreements.



CULTURAL RESOURCES MANAGEMENT

Team

Formerly Used Defense Sites project team, Alaska District, U.S. Army Corps of Engineers

The cleanup and restoration of an abandoned World War II defense outpost on a remote Alaskan island earned a project team from the Alaska District of the Army Corps of Engineers the Secretary of the Army Environmental Award for Cultural Resources Management.

At Fort Tidball, a remote outpost on the 1,320-acre atoll of Long Island (about 6 miles east of Kodiak Island) that is accessible only by helicopter or private boat, a pristine and historical landscape remains largely intact. Decommissioned in 1945, the fort is now eligible for listing in the National Register of Historic Places.

To maintain the integrity of this valuable site, a team of cultural resource and environmental restoration experts from the Alaska District of the Army Corps of Engineers took on the job of repairing dilapi-

ated buildings and cleaning up hazardous waste left behind by military operations. At the same time, they worked to preserve the ecological and historical significance of the island, which has a Stellar Sea Lion haul

out (a place to relax on land) and eagle nesting habitat, as well as archeological sites from Russian settlements and the pre-historic period.

The cleanup and restoration project resulted in clean closure of 42 contaminated sites on the island, including removal of:

- Dilapidated wood frame structures containing asbestos,
- Soil contaminated with fuel and Polychlorinated Biphenyls (PCBs), mixtures of synthetic organic chemicals once used in many industrial and commercial applications such as electrical transformers and rubber products, and
- Physical safety hazards from bunkers, open underground utilidors, vaults and screw pickets strung with barbed wire.

As part of the project, bunkers and some roads were rehabilitated. Additional structures at the site included mess halls, generator buildings, a headquarters complex, concealed planning and plotting buildings, Quonset huts, wooden and steel observation towers and concrete searchlight munitions bunkers. A key element of the work at Fort Tidball was close cooperation between the Army and the landowners (Alaska Native corporations Leisnoi and Koniag), local community, Alaska Department of Environmental Conservation, Alaska Department of Natural Resources and the Alaska State Historic Preservation Officer.

Fort Tidball is one of 130 sites in Alaska being restored under the Formerly Used Defense Sites program. This program is expected to continue through 2016 with \$545 million worth of cleanup work yet to complete.

"The fact that this team works closely with stakeholders and continues to build strong community relations is a win-win situation that will have far-reaching advantages," said awards judging panel member Toni Patton-Williams, Program

Manager for Natural and Cultural Resources, Office of the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health.

CULTURAL RESOURCES MANAGEMENT

Installation (Army and DoD)

Texas Army National Guard

Substantially decreasing waste from diesel fuel, paint solvent and other hazardous materials helped earn the Texas Army National Guard its Secretary of the Army Environmental Award for Environmental Quality.

In Texas, the Army National Guard manages 38 maintenance facilities, 102 armories and 11 training sites on more than 40,000 acres across the state. At one of these sites, a large vehicle rebuilding and rehabilitation operation, the use of new systems and methods to recover and recycle hazardous materials produced multiple benefits. A diesel fuel recycler recovered 3,100 gallons of fuel. Other recovery systems reduced waste from paint solvent by 750 gallons (136 percent) and antifreeze by 1,980 gallons (360 percent).

In 2002, the Texas Army National Guard also began the nation's first experimental Environmental Management System for an agency-wide, full-circle process to use and treat hazardous waste and materials.

Partnership building is another significant aspect of the Texas Guard's pollution prevention program. The Guard serves as a founding member of the Texas Pollution Prevention Partnership, a joint venture of all Department of Defense services, along with state and federal regulatory agencies, to promote the use of pollution prevention in every day business practices.

"The Texas Army National Guard has successfully implemented preventive measures, such as a comprehensive pollution prevention program, that allow it to meet its obligations both to care for the environment and maintain their readiness if called



Workers from Brechan, Inc. remove contamination from a concrete pad at the former Headquarters, Fort Tidball, Long Island, Alaska.



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upon," said awards judging panel member Juan Lopez, Chief of Staff from the White House Task Force on Waste Prevention and Recycling. "Their responsible handling of hazardous wastes has resulted in a facility that requires less regulation than other facilities of the same scope."

ENVIRONMENTAL QUALITY

U.S. Installation

Texas Army National Guard

Keeping one of Texas' oldest military sites up and running helped the Texas Army National Guard earn both a Secretary of the Army Environmental Award and a Secretary of Defense Environmental Award for installation cultural resources management.

In Texas, the Army National Guard manages nearly 40,000 acres of land in support of military training and for public recreation. This geographically and biologically diverse land contains some of the state's most valued prehistoric campsites and villages, late-1800s and 1900s homesteads and farms, cemeteries and World War II buildings.

The cultural resources staff of the Texas Army National Guard has established several programs to evaluate and protect these historical and archeological sites, including Native American sites.

One of these protected places is Texas' third oldest active military installation, the Camp Mabry Historic District in Austin. Founded in 1892, it was the Texas Volunteer Guard's first permanent camp. It was placed on the National Register of Historic Places in 1996.

Since then, the Texas Army National Guard has continued stewardship of the 26-building, 220-acre site. The Texas Guard completed a special maintenance plan for Camp Mabry in October 2001, and secured \$60 million (over six years) for building repairs and improvements from the \$850 million in general bond funds approved by Texas voters in 2001.

"The Texas Army National Guard is

responsible for a tremendous variety of historic properties across the entire state," said award judging panel member Lee Foster, a cultural resources action officer with the Army Office of the Director of Environmental Programs. "Successfully balancing its mission with effective management of such a diverse array of cultural resources is a signal accomplishment, worthy of recognition at the highest level."

Additional accomplishments that earned the Texas Army National Guard its award include:

- Evaluating 95 percent of the Guard's nearly 40,000 acres through site testing to allow essential military training while providing protection to historically and archeologically significant sites.
- Completing a pedestrian survey covering 6,000 acres of Camp Maxey that documents settlement pattern information of 100 archeological sites from the late Paleo-Indian to the late prehistoric periods.
- Conducting research in cooperation with the University of Texas at San Antonio and Southwest Texas State University to develop models for the improved evaluation of archeological sites.

ENVIRONMENTAL QUALITY

Overseas Installation

*282nd Base Support Battalion,
Hohenfels, Germany*

Persistent gains toward the goal of reducing pollution won the 282nd Base Support Battalion in Hohenfels, Germany, a Secretary of the Army Environmental Award for Environmental Quality in the overseas installation category.

Highlights of the environmental program at Hohenfels include a hazardous waste control center, a recycling center and water pollution controls. The program also emphasizes a commitment to integrating



Outreach is another important component of Hohenfels' environmental program. Mr. Wittl, 282d BSB Hohenfels public affairs office, shows his hawk "Wisky" during the 2002 Earth Day "Environmental March," staff and children from the Hohenfels Elementary School. Picture courtesy of 282d BSB Hohenfels.

environmental stewardship into all military activities on post and to a cooperative relationship with host nation officials.

"Responsible environmental stewardship and outstanding relations with the local community and host nation are what impressed me most about the 282nd Base Support Battalion's nomination package," said Marguerite Duffy, an environmental protection specialist from the Environmental Protection Agency who served on the awards judging panel.

At the 282nd Base Support Battalion, the Army manages 40,035 acres of land in support of military training and for public recreation, making it the second largest United States training area in Europe. One of the main environmental challenges faced by the battalion is created by live fire training in the Hohenfels permeable, rocky-layered terrain. Implementing extensive water quality control measures, such as constructing permanent ground water monitoring stations, installing oil water separators at all refueling facilities, and enacting spill response and prevention plans, has helped address some of these challenges.

Additional accomplishments include:

- Opening a state-of-the-art haz-



ardous waste control center that uses a barcode system to track and control stock levels, expiration dates, storage locations and disposal of hazardous wastes such as antifreeze, paint and motor oil. This new system enables the Army to order and store only the quantity of these substances that it needs, and it provides an exact accounting of recycled materials for safe disposal.

- Operating the Hohenfels Recycling Center, which collects and processes recyclable goods and household hazardous waste seven days a week. Last year, the center collected 3,358 tons of recyclables.
- Developing a sludge treatment process that has reduced disposal of sludge from vehicle wash racks by 80 percent.
- Cutting the use of pesticides by 70 percent.
- Protecting numerous threatened and endangered plants and animals listed in the Red Data Book of Threatened and Endangered Species for Germany and the State of Bavaria.

POLLUTION PREVENTION

Installation

The National Training Center and Fort Irwin, CA

Reducing solid waste going to landfills by more than 40 percent by recycling and composting is one of many accomplishments that earned Fort Irwin, Calif. its Secretary of the Army Environmental Award for Pollution Prevention.

Fort Irwin is one of the first installations to surpass the Department of Defense's goal of diverting 40 percent of all solid waste currently generated by 2005. The installation met this challenge by boosting the use of its recycling center and composting facility. Since 1997, this has increased the amount of materials being

recycled by 400 percent, saving the Army more than \$1.2 million.

In addition to solid waste, the Fort Irwin Compost Program addresses air quality and water conservation. In the past three years, the program has diverted 2,600 tons of sewage sludge and 60,000 cubic yards of waste wood from landfills, thereby eliminating these waste streams.

"Fort Irwin's program demonstrates the wide range of efforts that comprise a comprehensive pollution control program," said awards judging panel member Malcolm McLeod, an environmental engineer with the U.S. Army Corps of Engineers.



One portion of the more than 4,000 tons recycled during the 2001 fiscal year at Fort Irwin. The fort has increased the amount of materials being recycled from households and offices by more than 400 percent. Photo courtesy of Fort Irwin.

"By targeting goals well above the minimum, Fort Irwin has displayed a real concern for the environment and established an impressive Army program."

At Fort Irwin, the Army manages 636,182 acres of arid basins, dry lakebeds and mountainous terrain in support of military training. Located in north-central San Bernardino County, Fort Irwin has been an integral part of the Central Mojave for over 60 years.

Additional accomplishments that helped earn Fort Irwin its award include:

- Reducing annual hazardous waste disposal costs by \$2 million between 1997 and 2002.
- Saving 44 million gallons of water a year by modifying a reverse osmosis plant and a vehicle wash facility.
- Eliminating 8,000 lbs. of chlorine gas previously generated during wastewater treatment plant operations.
- Composting 60,000 cubic yards of wood pallets, ammo boxes, target scrap and yard waste at the installation's Compost Pilot Plant.
- Maintaining a violation-free status for over 5 years for the hazardous waste program and the wastewater and drinking water program.

POLLUTION PREVENTION

Team (Army and DoD)

Pollution Prevention team, U.S. Army Forces Command Headquarters, GA

The creation of an Army-wide pollution prevention initiative earned a Headquarters, U.S. Army Forces Command team both a Secretary of the Army Environmental Award and a Secretary of Defense Environmental Security Award for in the Pollution Prevention category.

Known as the Army's Installation Sustainability Program, the initiative aims to reduce constraints on military training, enhance the quality of life for soldiers and their families, and improve community relations. To accomplish these goals, it lays out a plan for installations to achieve a positive balance between military readiness and environmental stewardship.

"The U.S. Army Forces Command Installation Sustainability Program is one of the best examples of comprehensive forward thinking in the environmental field that I have seen in years," said awards judging panel member T.J. Granito, program manager for the U.S. Coast Guard's Environmental Management Division. "The U.S. Army Forces Command team



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has taken the lead not only in looking beyond pollution prevention, but initiating steps to ensure that environmental management is or will be incorporated into all aspects of future missions."

In developing the program, the team refocused the pollution prevention planning process to specifically tie mission requirements to environmental issues. The program's major components are education, outreach, process improvement and forming partnerships to engage the environmental and Army communities in pollution prevention planning and implementation.

The team's collaborative development process drew input from installations and experts in the sustainability field, as well as local communities.

ENVIRONMENTAL RESTORATION

Letterkenny Army Depot, PA

Recent strides in the long-term cleanup of soil and groundwater at Letterkenny Army Depot, near Chambersburg, Pennsylvania, earned a Secretary of the Army Environmental Award for Environmental Restoration.

Letterkenny is a 19,243-acre base that serves as the nation's primary provider of air defense and tactile missile materiel support. Environmental restoration work at



Paul G. Landry, Geologist (Weston Solutions, Inc.) takes groundwater level readings of a newly developed well during the pilot studies performed in the K area at Letterkenny Army Depot, PA. Photo courtesy of Letterkenny Army Depot.

the installation focuses on sites first used in the 1940s for the maintenance, modification, storage and demilitarization of vehicles, missiles and ammunition. These past activities left behind weaponry processing components such as solvents, heavy metals, petroleum hydrocarbons (PHCs), polychlorinated biphenyls (PCBs) and volatile organic compounds.

Recent accomplishments in the cleanup of soil and groundwater at these sites include the removal of 14,300 tons of

contaminated soils from old scrap yards, landfills and storage areas during the last three years.

Another challenge – the existence of groundwater contamination under a majority of 1,450 acres of land that the installation was directed to transfer to the local community under the Base Realignment and Closure Act – was solved with a unique approach. The land transferred included only the top eight feet of soil, which is above the high ground water level and still allows room for underground infrastructure needed to redevelop the land.

At the same time, the installation is pursuing advanced technologies to clean groundwater. Letterkenny has entered into three pilot programs to test new methods of cleaning groundwater. These methods involve the injection of hydrogen peroxide and other solutions into the groundwater's bedrock aquifer to identify contaminants and neutralize them.

"Although Letterkenny's environmental restoration staff faces tough challenges, they still have found a way to explore innovative technologies, provide opportunities for small business, form partnerships, and make property available for transfer," said Kristine Kingery, an environmental engineer with the Army's Office of the Director of Environmental Programs who served on the awards judging panel. **PWD**

FY03 ACOE winners recognized

The 10th Area Support Group (ASG), Torii Station, Okinawa, Japan, was selected as the Chief of Staff, Army (CSA) Army Communities of Excellence (ACOE) winner for FY03.

The CSA/ACOE finalists were:

- 20th Area Support Group, Daegu, Korea
- 409th Support Battalion (Base), Vilseck, Germany
- Fort A.P. Hill, VA
- Fort Benning, GA

- Fort Bragg, NC
- Fort McCoy, WI
- Ohio ARNG, Columbus, OH
- TACOM ARDEC
- Picatinny Arsenal, NJ
- White Sands Missile Range, NM.

These premier installations were recognized at the CSA/ACOE Awards Ceremony on 1 May 2003. The cash prize for the CSA/ACOE winner this year was \$3,000,000. The CSA/ACOE finalists

received a \$500,000 prize. Representatives from each installation received an ACOE trophy and ACOE flag during the awards ceremony.

Note: This year's CSA/ACOE winner, 10th ASG, Torii Station, also represented the Army at the Commander in Chief's Annual Award for Installation Excellence Ceremony on 2 May 2003 at the Pentagon.

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White House Closing the Circle awards announced

On April 22, 2003, Federal Environmental Executive John Howard announced the winners of the prestigious White House Closing the Circle Awards. Federal employees representing eleven Departments and Agencies from across the country will gather on June 10, 2003 at the Presidential Hall of the Eisenhower Executive Office building, in Washington, DC, to accept White House awards for their commitment to environmental stewardship.

"These outstanding programs demonstrate our federal workforce is committed to improving its environmental performance and protecting our resources through such actions as establishing environmental management systems; increasing the purchase of green products and services; designing, constructing, and operating buildings using sustainable principles; and reducing the generation of wastes," said Mr. Howard.

Twenty-six award winners were selected from the over 200 nominations received this year. Here are the Army winners:

Education and Outreach

Department of Defense, US Army Forces Command Fort McPherson, GA:
US Army Forces Command Installation Sustainability Program.

Sustainable Design/Green Buildings

Department of Defense, U.S. Army Garrison, Fort Huachuca, AZ:
Fort Huachuca Water Management Team, Water Resources Management Process and System.

Environmental Management Systems

Environmental Protection Agency, Fort Meade Environmental Science Center, Fort Meade, MD:
Greg Allen, EMS Implementation and Outreach at EPA's Environmental Science Center.

Biobased Products

Department of Defense, Defense Energy Support Center, Fort Belvoir, VA:
DESC Product Technology Standard and Ground Fuels Divisions, Promotion of the Use of Bio-based Fuels in the Federal Government.

Waste/Pollution Prevention

Department of Defense, Crane Army Ammunition Activity, Crane, IN:
Marine Location Marker Team, Reuse of Marine Location Markers at Crane Army Ammunition Activity.

POC is Juan Lopez, (202) 564-9288, e-mail: Lopez.juan@ofee.gov **PWD**

USAEC lauded for land conservation

The U.S. Army Environmental Center (USAEC) and Fort Bragg recently received North Carolina Conservation Leadership Awards from that state's chapter of The Nature Conservancy.

The awards recognize people and organizations who have made extraordinary contributions that have had a lasting impact on conservation in the state. The North Carolina chapter of Nature Conservancy presented the awards May 3 during its 25th Anniversary Celebration in Hillsborough, North Carolina.

"There are few places in the world where the long leaf pine ecosystem remains intact at the scale and richness it had when explorer John Bartram first saw it in the 1700s," said Katherine Skinner, executive director of the North Carolina chapter of The Nature Conservancy. "Fort Bragg is one of those few places, thanks to a long history of good stewardship by the Army."

The U.S. Army Environmental Center

and Fort Bragg received the awards for their role in the Private Lands Initiative, which helped form a partnership agreement to protect land surrounding Fort Bragg. Protected parcels provide two key benefits: they preserve long leaf pine habitat for the endangered red cockaded woodpecker and ensure that land uses near the base remain compatible with military training. This is helping red cockaded woodpecker populations in the region recover and ensuring Fort Bragg's future viability as the world's premier power projection installation.

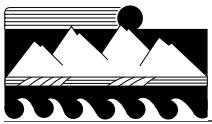
"Many years of hard work and perseverance have gone into this endeavor," said COL James De Paz, commander of the U.S. Army Environmental Center. "It's wonderful to share a common goal of preserving critical habitat for endangered species, while also enabling the Army to continue to train and prepare America's soldiers to defend our nation."

The formation of the Army's partnership with The Nature Conservancy and other conservation groups at Fort Bragg marked the first cooperative agreement of its kind. It has established a model for the use of a land preservation approach to endangered species management at installations.

Key members in the Sandhills Conservation Partnership formed through the Army's Private Lands Initiative include The Nature Conservancy, U.S. Fish and Wildlife Service, Fort Bragg, N.C. Wildlife Resources Commission, Sandhills Ecological Institute and the Sandhills Area Land Trust.

For more information on the Army's Private Lands Initiative, please visit USAEC's web site at <http://aec.army.mil>

POC is Eleanore Hajian, U.S. Army Environmental Center, 410-436-1660; e-mail: eleanore.hajian@aec.apgea.army.mil **PWD**



Celebrating Army environmental victories

by Deborah Elliott

Preserving the Environment While Protecting Our Freedom – this was the Army's battle cry here on the homeland as the nation celebrated Earth Day in April. In recognition of the importance of environmental stewardship, approximately 140 installations across the U.S. hosted Earth Day events.

Earth Day at Fort Sam Houston, Texas, was celebrated in part with the awarding of high-level Army honors for environmental stewardship to Fort Irwin, California, and Fort Huachuca, Arizona. Fort Sam Houston is the home of the Army's Installation Management Agency outwest Regional Office, which oversees the award-winning installations. The Secretary of the Army Environmental Awards were presented by Mr. Raymond J. Fatz, the deputy assistant secretary of the Army (Environment, Security and Occupational Health). Fatz originated the Army's current Earth Day program in 1995.

"With Earth Day activities in full force across the Army this week, there can be no more appropriate time to present these awards," said Fatz. "Let there be no doubt – the Army is fully committed to the best in environmental stewardship."

Mr. Fatz also presented two Secretary of the Army environmental awards to the Texas Army National Guard at Camp Mabry in Austin. The Texas Guard won awards for their environmental quality and cultural resources management programs. And, as Mr. Fatz was happy to announce, the bureau's cultural resources program

also won the Secretary of Defense Environmental Security Award, helping the Army to garner more than 30-percent of the Department of Defense-level honors. Fort Huachuca also won a DoD award, as did the sustainability team from forces command. These awards were presented at the Pentagon May 7. (See pages 4-8.)

The U.S. Army Environmental Center Southern Regional Office, based in Atlanta, Georgia, held its annual Earth Day celebration at Zoo Atlanta April 25. The event included more than 15,000 people, and activities were designed specifically to reach the general public and stakeholders. A feature of the event was a roundtable discussion over breakfast among key stakeholders and other interested parties. Attendees included representatives from the Army, the US EPA, US Fish & Wildlife Service, Georgia Pacific, The Nature Conservancy, the Georgia Department of Natural Resources, the US Forest Service and the Georgia Conservancy.

Incorporating the public and local installation communities into Earth Day activities has been challenging, since many posts were closed in the wake of the Sept. 11, 2001 attacks. Rather than miss the opportunity to celebrate Earth Day with this important audience, program coordinators at Red River Army Depot, Texas, took their show on the road this year. With a spill response truck in tow, the hazardous materials team set up shop at the Central Mall in Texarkana. Visitors to the mall saw the equipment and spoke with the Red

River professionals about their hazardous materials response capability. Reaching out to the public with this important information served the dual purpose of highlighting Red River Army Depot's commitment to the environment and bolstering the local public's confidence in available emergency preparedness resources.

Engaging the public is also a central focus for Fort Campbell, Kentucky, which has one of the most strategic and enduring Earth Day programs in the Army. Its goals include increasing awareness of issues, providing for positive dialogue and gaining insight into their stakeholders. One way the environmental team at Fort Campbell achieves these goals is to promote their Earth Day event at a different location every year. This enables them to reach ever-widening audiences and increase areas of opportunity. Another tactic the Fort Campbell team employs is to incorporate their subject matter experts in their program and develop presentations designed to facilitate conversations that both give and receive helpful information. The environmental team at Fort Campbell consistently achieves its objective to reach at least 1,500 participants with every Earth Day program.

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*Deborah Elliott, a Booz Allen Hamilton consultant, serves as Army Earth Day Coordinator at the U.S. Army Environmental Center **PWD***

Deconstruction at Fort Ord: portable machine strips leaded paint from siding

by Dana Finney

A new self-contained remilling and recovery system can process lead-based paint (LBP)-covered wood at deconstruction sites, planing off the contaminated surface and leaving a clean, reusable board. In a demonstration at the former Fort Ord, California, the system salvaged over 56% of the wood siding

removed from two barracks. Besides reclaiming the lumber, this process diverted several tons of solid waste from landfills, including hazardous LBP.

The U.S. Army Research and Development Center (ERDC) is conducting several studies that seek to expand deconstruction and reuse of Army buildings slated for

removal. Some 50 million square feet of surplus buildings must be removed from installations by FY05. Given that demolishing an average two-story WWII barracks produces nearly 80 tons of debris, Army-wide, the result would be a staggering volume of solid waste if no efforts are made to reclaim this material. ➤



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“With tens of thousands of WWII-era wooden buildings still remaining on Army installations, the potential exists for recovering significant amounts of premium lumber rather than disposing of this natural resource and using up landfill space,” said Richard Lampo, researcher at ERDC’s Construction Engineering Research Laboratory (CERL).

The portable remilling machine demonstrated in California represents a unique adaptation of equipment produced by Wood Waste Diversion, Inc., and Auburn Enterprises, LLC. The system mechanically planes off the LBP and a thin layer of wood underneath. This results in a bare piece of lumber. The wood shavings with the waste paint are captured and collected separately. The system is trailer-mounted and can be easily transported to a deconstruction site.

CERL demonstrated this technology in partnership with the U.S. Department of Agriculture’s Forest Products Laboratory (FPL), Pennsylvania State University (PSU), CTC, Inc., and the manufacturers. Fort Ord, the largest Army installation to close under Base Realignment and Closure, has over 1,400 wooden buildings left that will have to be removed before the property can be redeveloped for civilian use.

“The quality of the wood siding in the Fort Ord buildings is the best I’ve seen,” said Dr. Robert Falk, research engineer at FPL in Madison, Wisconsin. “Most of it is old-growth Douglas fir lumber and is of the highest quality ever produced. It is tight grained, dry, and has few defects. In checking 14,000 linear feet of painted siding—that equates to nearly 3 miles—we found less than 10 knots.”

Short-run demonstration results for the remilling system suggest that it could process the siding from one building every hour, said CERL researcher Tom Napier. He added that an air quality team tested the work area for airborne lead levels, both personal and ambient, during the demonstration. The levels detected were not considered to be problematic.

The Wood Waste Diversion-Auburn system represents one of several emerging technologies that could help overcome



Portable, self-contained wood de-leading and recovery system.

obstacles to deconstruction. Two critical issues are:

- (1) Dealing with the LBP that covers much of the wood.
- (2) Finding viable markets for the reclaimed wood.

Falk has also devised methods to strip LBP from the Fort Ord siding and create new building materials using standard woodworking equipment in-house at FPL. ERDC is evaluating each process in light of the fact that what works at one deconstruction site may not work at another.

While the portable system removes most of the LBP from the lumber, there are still the wood shavings and paint residue to address. Lampo believes this material could also be largely recycled.

“We’re looking at technologies that might be able to condense the waste and recover lead for uses such as batteries. One company, ARI Technologies [Tacoma, Washington] has a thermo-chemical system that might work with some modifications,” said Lampo. He is also investigating other recovery and disposal methods.

The material removed from the Fort Ord buildings was a #105 drop siding profile. The siding boards’ thickness has implications on how that material might be reused. CERL’s Napier said, “A standard tongue-and-groove [T&G] flooring profile can be milled from the siding boards, and the quality of the Fort Ord material suggests T&G flooring would be an excellent use. Furthermore, pieces as short as 16 inches can still be used as flooring, which means fewer boards are wasted. Bevel siding and V-groove paneling are also good

uses, but will require the full length siding boards.”

Work by the FPL and PSU indicates that the market for products remilled from Fort Ord siding is very promising. At the Wisconsin laboratory, FPL and PSU evaluated the feasibility of producing clean T&G flooring, V-groove paneling, and lapped bevel siding from the painted siding. Falk agrees that flooring is a very feasible product, as it can use shorter pieces. In addition, antique Douglas fir T&G flooring currently sells for about \$4-\$7 per square foot.

“At this selling price, the buildings slated for disposal at Fort Ord alone have the potential to produce millions of dollars in value-added product. However, while we see great potential, we don’t have all the answers on the costs associated with making these products,” he said.

The system manufacturers are continuing to optimize their technology. One goal is to produce a finished product onsite rather than transporting the bare wood to another facility. The FPL-PSU process currently has an advantage in this respect since both cleaning and remilling occur at the same site. However, LBP-coated wood has to first be transported in that process.

For more information about this project or any of ERDC’s deconstruction research, please contact Richard Lampo, (217) 373-6765, e-mail: r-lampo@cecer.army.mil or Tom Napier, (217) 373-3497, e-mail: t-napier@cecer.army.mil

Dana Finney is the public affairs officer for ERDC/CERL **PWD**



Fort Bragg sets new EPAS record

by Lynda S. Pfau

Fort Bragg just raised the standard when it comes to Environmental Performance Assessment System (EPAS) assessments by receiving a record-setting nine positive findings.

Conducted every two to five years, the EPAS assessment provides commanders with an external evaluation of compliance with State, Federal and Army environmental regulations. EPAS assessments are useful in identifying installation environmental deficiencies as well as strengths, and increasing environmental awareness throughout the installation.

"Some of the assessors who wrote positive findings have never written a positive finding in their life," said David Bensch, EPAS Team Leader. Positive findings are written only when programs go well above and beyond mere compliance with environmental regulations.

Conducted by the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM), more than 200 individual operation and program sites were visited and more than 320 interviews and visits conducted by the 18-member EPAS team over a ten day period. Sites evaluated included the 90-Day Hazardous

Waste Storage Site, Womack Army Medical Center, AAFES facilities, the Water Treatment Plant, Simmons Army Airfield, Commissary, and the Wastewater Plant to name a few. Units such as COSCOM, 18th Aviation Brigade, MATES, DISCOM and others also received assessments on their motor pools, paint shops, wash racks, hazardous materials/waste storage, and more.

"Overall," Bensch said, "Fort Bragg has a well-designed environmental program and an internal assessment program to continually evaluate and correct operational environmental practices."

The last EPAS (then known as ECAS-Environmental Compliance Assessment System) conducted on Fort Bragg was in 2000.

"One of my first briefings when I arrived at Fort Bragg as Garrison Commander was the results of the last EPAS inspection," said COL Tad Davis. "The outcome of this assessment validates our commitment to a sustainable installation that can meet the mission while acting as good stewards for the environment."

Programs receiving positive findings included Natural Resources, Pollution Prevention, Sustainable Fort Bragg, Womack

AMC Recycling and the Lithium Battery Recycling. Other areas receiving positive findings included environmental noise management -encroachment, satellite accumulation areas, and automated transfer of air emission data.

"Fort Bragg's Pollution Prevention program is one of the top in the Army," Bensch said. "The lithium battery recycling program saved more than \$50,000, and Natural Resources has implemented a data based program to aide in resource management."

Davis said the findings from the current ECAS assessment demonstrate what can be accomplished when personnel go beyond just meeting compliance.

"If you establish an environmental program just to prevent NOV's (Notice of Violation), you're set up for failure," said Davis. "Striving for compliance is not enough, you have to take it to the next level."

For more information on EPAS, please contact Nancy Delp at (910) 396-3341, ext. 478.

Lynda S. Pfau is an Environmental Resource Coordinator at Fort Bragg, NC **PWD**

Fort Drum's 10th Mountain Division helps battle acid rain

by Karen J. Freeman

It may not have been a mission to fight global terrorism, but earlier this year the 10th Mountain Division (Light Infantry) at Fort Drum in New York took part in a valuable mission to aid the environment in its fight against acid rain. The mission was coordinated through the Fish and Wildlife Program, Natural Resources Branch of the Environmental Division, Directorate of Public Works, Fort Drum.

In February, soldiers from the 1st Brigade's 1st Battalion, 87th Infantry Regiment and the 10th Aviation Brigade's 2nd Battalion, 10th Aviation Regiment assisted

the New York State Department of Environmental Conservation (NYSDEC) with adding agricultural lime to two lakes in the Adirondack mountains. The pH levels in Peaked Mountain Lake and Evergreen Lake are below normal due to acid rain, however over time, the lime will raise the pH levels to create healthy habitats for trout and other aquatic life.

Eighteen cargo nets, supplied by the Fort Drum's 10th Forward Support Battalion and the installation's Light Fighters School were each packed with 2-1/2 tons of palletized lime by NYSDEC personnel

and placed on the ice at Stillwater Reservoir in the Adirondack Park.

In below zero temperatures, the 1-87 Infantry inspected each slingload and hooked it to a Black Hawk helicopter hovering above the reservoir. Piloted by the 2-10 Aviation Brigade, two Black Hawk helicopters transported the slingloads to the lakes. NYSDEC workers manually spread the lime across the frozen surfaces. When the snow melts in the spring, the lime will be distributed evenly throughout the water.

Over the course of 5 hours, the



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A Black Hawk helicopter piloted by Fort Drum's 2-10 Aviation hovers above Stillwater Reservoir in the Adirondacks, while on the ice, soldiers from the 1-87 Infantry prepare to attach a slingload of lime for transport to Evergreen Lake.

Black Hawks distributed a total of approximately 37 _ tons of lime to Peaked Mountain Lake and 7 _ tons to Evergreen Lake, expediting a process that would normally take the NYSDEC close to a week to accomplish without the use of military helicopters.

For Fort Drum soldiers, the lake liming mission represented an exciting and realistic training opportunity with the added perk of aiding the environment.

"To run a complete air assault mission with a small unit at the squad level, without platoon leaders, was a great experience," said SSG Christopher Gates, 1-87 Infantry. "And, the extreme weather conditions helped to build confidence in our cold-weather gear, proving we can survive below zero air temperatures and minus 80 degree rotor wash in combat conditions."

"We have a couple of guys, myself included, new to the unit and this mission

gave us the opportunity to train on many requirements, the slingload being one of them," said pilot and 1LT Bernie Reilly of the 2-10's Alpha Company, 1st Platoon. "It was challenging, especially with the blowing snow churned up by the helicopters, but we had a 4-person crew in each helicopter, everyone did their job and it went well."

"Plus, it was really rewarding to get out in the community and fly a mission that helped do something positive for the environment," added 1LT Reilly.

Raymond Rainbolt, Fort Drum's Fish & Wildlife Program Manager, spoke highly

of the cooperation among all parties involved. "It truly was a joint, cooperative effort with benefits to several groups with varying interests," said Rainbolt.

"The NYSDEC had the assistance and tools it required to lime the lakes, the Adirondack environment benefits by the improvement of two important aquatic ecosystems, the 1-87 Infantry received cold-weather training, the 2-10 Aviation Brigade got "stick time" for slingload training, and ultimately, recreationists will reap the benefits by having more bodies of water available to fish," summed up Rainbolt. "You can't ask for more of a win-win situation."

On alternating years since 1997, the Fish and Wildlife Program, NYSDEC and 10th Mountain Division have partnered together on this unique project to reverse the harmful effects of acid rain to lakes in the Adirondack Park. Missions scheduled in 2001 and 2002 were canceled due to ice conditions and administrative logistics, respectively; however, liming missions flown to Evergreen Lake in 1997 and Hidden Lake in 1999 successfully raised the pH levels in both lakes, which were later stocked by the NYSDEC with native brook trout.

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Coming soon

Look for the July/August issue of the *Public Works Digest* on **Facilities Engineering.**



Aberdeen remediation project focuses on environmentally-friendly facility

by Jerry L. Norris

The Edgewood Area of Aberdeen Proving Ground was created in 1917 as Edgewood Arsenal, with a mission that covered the entire spectrum of chemical agent research and development. As the result of accidents, spills and once common disposal practices, many volatile organic compounds (VOCs) found their way into the surrounding environment and contaminated the underlying Canal Creek Aquifer.

For years, wells in the aquifer provided potable water for the Edgewood Area, but in 1984 after the VOC contamination was discovered, the wells were removed from service and the treatment plant deactivated.

In a July 2000 Record of Decision with the U.S. Environmental Protection Agency, the Army agreed to remediate the contamination and the APG Directorate of Safety Health and Environment (DSHE) awarded a project to Weston Solutions to design, construct and operate a remediation system. The Baltimore District Corps of Engineers provided design and construction oversight and the APG Directorate of Installation Operations (DIO) coordinated for the post.

Stressing conservation and reuse of existing assets, plans quickly centered upon converting the old plant to house the new system. Major building components were removed for recycling, the exterior settling basin converted to a contained equipment area and the interior renovated. Several thousand feet of pipe excavation were eliminated by using the original raw water piping as a conduit for the new supply lines and control cables.

A notable example of partnership among numerous organizations was the treatment of the plant discharge. The original concept was to pipe the effluent almost 6,600 feet to discharge into Chesapeake Bay, but because of the line length and the potential for unexploded ordnance, that would have been very costly and disruptive. Weston evaluated the plant discharge's potential impact upon the small Canal Creek stream that runs through the site

and determined that they would be minimal. The Maryland Department of the Environment then approved a new discharge line of less than one thousand feet that was installed inside an old drain line from the plant to the creek.

Eight wells capture contaminated water and pump it to the treatment plant, where it is first chemically treated to remove dissolved metals. After treatment sediments are removed, the water is then passed through a synthetic adsorption media called Ambersorb resin. Historically granular activated carbon would have been used for this application, but Ambersorb is more efficient for low-level contaminants and has the added advantage that it can be regenerated for reuse thereby eliminating the replacement and hazardous waste disposal costs of carbon media.

There are four Ambersorb columns that function in pairs with one column acting as the primary adsorption column for VOC

removal and the second column acting as a polisher to remove any remaining contaminants. The resin adsorption process works by bonding to the VOCs and removing them from solution. When the lead column in the series becomes saturated with VOCs, the second column becomes the primary treatment column and the saturated one is regenerated by passing steam through it. The VOCs are driven off the resins by the steam and pass with the steam into a condensation vessel. There the insoluble VOCs separate from the water and are drawn off and drummed for disposal.

The water solution that contains residual soluble organic compounds is pumped back into the process for retreatment. The regenerated column is returned to service as the polishing unit. After VOC removal, the water is aerated and discharged into the creek. The discharge is periodically monitored for VOCs and dissolved oxygen content to insure proper plant operation. ➤



Plant operator Carl Thomas demonstrates metals removal process to COL Mardi Mark, APG Garrison Commander.



Mobile District provides unique NEPA support to RCI

by Donald M. Conlon

As part of the HQ USACE Residential Communities Initiative (RCI) Project Delivery Team, Mobile District developed a fast track National Environmental Policy Act (NEPA) process to meet the tight schedule requirements of the Army Family Housing Privatization program. This approach is applicable to NEPA actions not covered by Categorical Exclusions, those requiring either an environmental assessment or an environmental impact statement.

A little program background information, some discussion of time constraints, followed by presentation of the Mobile's NEPA approach will show the effectiveness of this application. The approach may be useful to many of you who are faced with fast developing projects with severe time limitations and are striving not merely to comply with environmental laws but to achieve an environmentally sustainable project.

Background

The Army operates and maintains

approximately 90,000 family housing units at installations throughout the United States. More than 75 percent of the units do not meet current army housing standards. Even so, the demand for housing at most installations exceeds supply. The lack of affordable housing off post forces many soldiers to live in installation housing that is in need of repair or renovation or to pay the extra 15 to 20 percent to live in the community. The Army estimates that as much as \$6 billion is needed to bring its housing stock up to current standards and to address the housing deficit.

Recognizing this need, and the lack of public funds, Congress enacted the Military Housing Privatization Initiative (Public Law 104-106) that enables military services to obtain private sector funds to satisfy family housing requirements. Under the direction of Mr. William A. Armbruster, the Deputy Assistant Secretary of the Army for Privatization and Partnerships, the Army competitively selects developers with substantial housing management experience and financial capa-

bility to partner with the Army to develop and execute plans to satisfy the housing needs at Army installations. This plan is known as the Community Development Management Plan (CDMP).

The partner furnishes the capital and expertise for the project in return for receiving ownership of the existing Army housing stock, and receipt of the soldier's basic allowance for housing. The Army retains ownership of the land but provides access to the partner through a 50-year lease. The contractual arrangements and the respective responsibilities of the partners, such as housing designs, special conditions, and financing are subjects for other articles.

Schedule Driver

Once an installation is selected for the RCI program, the Army sets a specific date to submit the CDMP to Congress for approval. When obtained, Congressional approval includes the notice to proceed. The Army sets these dates to address the housing needs of the installation as soon as

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Even though the parts per million concentrations in the ground water are high by environmental standards, the plant is only expected to produce one or two drums of concentrated VOCs per year. As additional protection, all process vessels are vented through carbon filters even though projected vapor emissions from the plant are below regulated levels. All wastes will be processed through the APG DSHE for disposal.

The entire plant is automated using a remotely accessible programmable logic controller (PLC) to monitor and control all functions. Two operators work one eight-hour shift five days per week to monitor plant operation, perform water quality tests and replenish chemicals. They will also perform routine maintenance and emergency repairs.

The PLC provides dial out error

notification and operators can correct many faults via the modem or respond in the event of a significant failure. The extraction wells are also integrated into the PLC and can be started and stopped remotely. Fail-safes throughout the plant will shut down the process if operating parameters are exceeded and plant shut-down automatically shuts down all wells.

The facility has many other environmentally friendly features beyond those mentioned. Steam for heat and resin regeneration is produced by a waste-to-energy plant that burns refuse to produce steam. In the summer, the steam is under utilized so the plant optimizes by using otherwise wasted steam. The exterior of the facility is landscaped using local plants that are able cope with the region's temperature and moisture fluctuations, and the parking lot is constructed with permeable

pavers rather than concrete or asphalt pavement.

Even though the past has created environmental issues that must be addressed, Aberdeen Proving Ground is moving forward in a partnership with the state of Maryland and the United States Environmental Protection Agency to identify and correct them. In this instance, we were not only able to remediate the basic problem but, with Weston Solutions' help, we were able to do so in an economically-sound and environmentally-beneficial way.

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is possible. This, in turn, drives a compressed schedule often requiring the partner to complete the CDMP in under six months time.

Complying with NEPA under such time constraints presents a real challenge. Even so, the plans developed for the first installations implemented under the RCI process, Forts Hood, Meade and Lewis, are remarkable. The plans are model environmental projects that take on the flavor of an upscale middleclass community with first class housing, shops, community centers, tennis courts, walking trails and other amenities.

RCI NEPA Challenge

The RCI challenge was how to perform NEPA documentation and analysis on a project with limited preparation time as the design is being developed and to complete the analysis in time for the decision maker to consider alternatives, incorporate environmental, cultural and socioeconomic concerns and approve the project. And, through it all, achieve an environmentally sustainable project.

RCI NEPA Approach

The solution was to manage the NEPA process simultaneously, in parallel with development of the CDMP. This is the way it works. Once an installation is designated to implement the RCI program, the NEPA process is initiated at the same time

as competitive selection of the partner is being conducted.

The initial task of the NEPA process is to gather baseline information on the installation infrastructure, natural, biological, and cultural resources and socioeconomic data. This is referred to in the NEPA document as the affected environment. This data is gathered for the Army proposed project footprint, which includes existing housing units and areas to be offered to the partner, once selected, for construction of new housing developments.

At the same time the NEPA process is initiated, the Environmental Baseline Survey, the National Historic Preservation Act Section 106 consultations with the State Historic Preservation Officer, and other necessary regulatory consultations are initiated. Compilation of this information is completed and presented to the partner shortly after its selection to identify environmental concerns that must be addressed as the CDMP is developed. Resources such as wetlands, endangered species, surface and ground water, and a gamut of other relevant environmental issues are identified, characterized, and presented to the partner.

As the partner begins to develop the CDMP and the design unfolds, the information is fed to the NEPA preparers to begin the resource impact analysis. At this stage, the NEPA and CDMP processes are running parallel exchanging project and environmental information. This is where the process gets tricky and requires intense management and good judgment.

Once the Army and the partner agree that the CDMP concepts are firm, and there will be no substantive revisions, the project has sufficient definition at that point to complete the NEPA analysis. The NEPA process is then completed as the CDMP package is being formalized into a submittal package. The NEPA process, usually an environmental assessment, is completed in time for the decision maker to sign the Finding of No Significant Impact (FNSI) before approving the CDMP.

Now look at what happened. Environmental data were supplied to the partner as the CDMP was being developed, achieving an environmentally sustainable project, and establishing protocols that eliminate the need for an environmental impact statement. In compliance with NEPA, the decision maker was knowledgeable of environmental and other relevant effects before making the decision to approve the CDMP.

This process is NEPA at its best, working in conjunction with project development to eliminate significant adverse effects and achieving a model environmental project as the end result, all within project time constraints.

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Donald M. Conlon is an environmental engineer with the Mobile District. **PWD**

Army team leads the cleanup of Lake Wilson's "green monster"

by Douglas MaKitten

The first stories in the Honolulu media last November sounded like something from a science fiction or horror movie -- "Green monster menaces Lake Wilson."

In this case, the "green monster" was the fast-growing, invasive water fern salvinia molesta and its impact on Wahiawa's Lake Wilson, was devastating. Within weeks salvinia carpeted the lake, turning the popular recreation area into

a weed-choked, totally unusable mess.

No one knows how salvinia got into Lake Wilson. Media reports said it is a popular plant for home aquariums. Reporters speculated that someone no longer interested in the hobby, dumped the contents of his or her aquarium, including some salvinia, into the lake. After that, the green monster started reproducing like rabbits on Viagra and by January the lake's open water had disappeared.

The state of Hawaii's Department of Land and Natural Resources led the battle against the salvinia. The task was enormous, with the lake's ecosystem, including an estimated 500 tons of fish, under threat. At the end of January, Hawaii State Senator Robert Bunda, president of the State Senate, put out a call for assistance from all local, state and federal agencies.

Among the first to answer that call was the Corps of Engineers. Soon after, ➤



ERDC scientist Dr. Linda Nelson and POH's Eric Lee inspect *salvinia molesta* at Lake Wilson during a February 2003 site visit. *Photo by Lorayne Shimabuku.*

soldiers from both the 25th Infantry Division (Light) and the Hawaii Army National Guard joined in and played a key role in clearing the lake of *salvinia molesta*.

The scientific knowledge and hard work has paid off and Lake Wilson no longer resembles the world's largest pool table. Open water is again visible and the green monster appears to be losing its grip.

The Corps' involvement actually began late last year, according to project manager Derek Chow, who said the Corps anticipated the state would need help.

"Mike Lee of POD (Pacific Ocean Division) and I coordinated with ERDC (the Corps' world-famous Engineer Research and Development Center in Vicksburg, Mississippi)," said Chow. "We knew that the scientists at ERDC have experience in dealing with *salvinia*, particularly in the southern states on the mainland."

Lee and Chow contacted ERDC's Water Operations Technical Support program manager Bob Gunkel. As a result, a team of Corps scientists from ERDC visited Oahu in February and made recommendations on how to remove the *salvinia* infestation and how to keep it from recurring. They also offered suggestions on how to deal with other invasive species.

The ERDC scientists included Dr. John

Barko, Dr. Michael Grodowitz, Dr. Linda Nelson and Dr. Mike Smart. They made site visits to Lake Wilson, Kawaii Nui Marsh, the Kaneohe-Kailua Dam, along with Chow, Lee, other POH and POD staff members and state and county officials. Reporters and television crews trailed along, and the site visits made headlines and led newscasts.

The good news was that only Lake Wilson showed evidence of serious *salvinia* infestation. However, the bad news was that the ERDC scientists were shocked by the lake's condition.

"On a scale of 1 to 10, this is a 10, the worst I have ever seen," said Barko in a response to a reporter's question. The other team members agreed Lake Wilson was in far worse shape than any *salvinia* problem they had observed on the mainland.

The ERDC team provided a range of options to help the state get, and keep, the *salvinia* under control. This included: biological, using a weevil that eats only *salvinia* and then dies when there is no more of the weed; chemical, initial spraying to kill the weed and follow-up spraying to keep it under control; and mechanical, ripping the *salvinia* out of the lake.

By the end of February state officials had a large excavating machine at work,

pulling *salvinia* out of the lake and disposing of it at area farms. Ironically, the weed that was so disastrous for Lake Wilson turned out to make excellent mulch.

At the same time, the state was using a Corps-recommended spray to kill the existing weed and slow future growth.

Meanwhile, the 25th Infantry Division (Light), located literally across the street from Lake Wilson at Schofield Barracks, was also getting involved. The Army has a long-standing tradition of being good neighbors and being concerned about the environment. The Soldiers eagerly pitched in to help save the lake, using the challenging mission as a training exercise.

By March 8, Soldiers from the 25th ID (L) and the Hawaii Army National Guard were gathering up and ripping out the weed from the lake.

A March 20, 2003 article in Hawaii Army Weekly by Sgt. Frank Magni, of the 17th Public Affairs Detachment, recounted the efforts of the Soldiers of Company B, 84th Combat Engineer Battalion (Heavy) to "rid Lake Wilson of *salvinia molesta*."

According to the article, the Soldiers used boats and nets to pull the weeds to shore, then piled the *salvinia* up and hauled it away in dump trucks. Other media reported similar stories.

So, has the "green monster" of Lake Wilson been defeated or, like sci fi and horror flicks, will the weed rise from the depths of the lake to create more havoc?

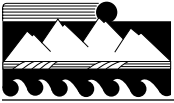
Chow thinks the information the Corps provided will help avoid a dreaded sequel.

"I think the technical information and management methods we provided the state will really help prevent that," said Chow. "However, fighting *salvinia*, and other invasive weeds, requires continuous effort. You have to have a good management plan and you have to follow the plan.

"You cannot eradicate the *salvinia*, but if you conscientiously spray and remove it, you can keep it under control," Chow concluded.

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Douglas MaKitten is the Chief, Public Affairs, for the Honolulu District. PWD



U.S. Army, Europe protects natural habitats

by Wolfgang Grimm

The United States Army in Europe (USAREUR) has implemented a comprehensive and effective environmental program with the overall goal to integrate environmental stewardship into all military activities. On military lands, natural habitats must be managed and protected while simultaneously supporting military mission requirements.

USAREUR's pro-active natural resources management and the implementation of the Integrated Training Area Management concept proved that environmental protection and military land use are not mutually exclusive but, on the contrary, of a symbiotic relationship.

The European Union's "Flora, Fauna, Habitat Directive" is one of the new challenges the military in Europe are facing. Army natural resources managers are challenged to keep the Army in legal compliance while simultaneously minimizing negative impacts of environmental legislation on the effective conduct of its military training mission. On one hand, our position is to maintain good stewardship of our training area environments; on the other, we must retain the flexibility to adjust to changing training requirements.

To safeguard U.S. military interests and be in legal compliance with German law, the U.S. Army Installation Management Agency, Europe Region and the German Federal Ministry of Finance have agreed to collaborate on development of a comprehensive environmental stewardship management plan. Due to its proactive conservation program, the U.S. Army Installation Management Agency, Europe Region (IMA-E) has a wealth of threatened and endangered species data available, which will be the basis for future German flora, fauna and habitat management plans.

Partnership with host nation governments and serving as responsible partners in stewardship of the lands entrusted to us is a critical element to building good relationships internationally. Our main objective is to protect natural resources while retaining the flexibility to maintain military readiness.

Environmental managers must be familiar with the requirements of a success-

ful military training exercise. Without this knowledge, environmentalists cannot optimally support military trainers. Trainers must identify their specific requirements to enable environmentalists to provide an optimal "classroom," as training lands are called.

Environmentalists also need a sound knowledge of natural resource features on the training area. For that purpose, environmental baseline surveys are performed focusing on threatened and endangered species, fauna, flora, soil, topography, vegetation communities, surface water, hydrology, and wetlands. Based on the survey results, and after having identified the training area carrying capacity (i.e., what pressure can an area take without being irreversibly damaged?), it is possible to assign the best suited land parcels to individual training missions while protecting natural habitats to the maximum extent possible.

Training areas have become very important retreat areas for threatened and endangered species. They are ecological islands surrounded by built-up areas and intensively used farm and forest lands. In U.S. military training areas, very limited amounts of fertilizers and no pesticides are applied, increasing the abundance of flora and fauna species.

Another important ecological factor is that all stages of natural succession, from bare ground to old-growth forests, are present on training areas. Training areas, therefore, provide homes for more flora and fauna species than other land in the densely populated and managed areas of central Europe.

Military training and environmental protection are not mutually exclusive. On the contrary, the enormous amount of threatened flora and fauna species thriving on military lands documents a symbiotic relationship.

The U.S. Army's mandatory integrated natural resources management plans require threatened and endangered species surveys be conducted for all training areas and other mission land. The results of the species surveys are overwhelming. They

reveal an incredibly high number of species, listed in the federal and state red list data books, thriving on military lands.

The location of species found are shown on a digital map, which can be overlaid on a GIS system to other map layers, such as topography, soil erodibility, surface waters, installation boundaries, etc. Clicking on a species location shown on the map opens a database with detailed species information and management recommendations. This GIS capability produces maps for training scenario writers, identifying areas for conduct of doctrine-compliant training with minimal impacts on the environment.

Close cooperation with host nation authorities is essential for a successful military environmental program. The U.S. Army in Europe has taken a proactive approach towards integrating environmental protection into all military activities. Military training areas have developed into lands of extremely high ecological value. They have become the most important retreat areas for threatened and endangered flora and fauna species.

The abundance of species demonstrates that military land use and species protection are not mutually exclusive. Military training and the subsequent readiness of troops have highest priority. The integration of professional natural resources protection into military mission requirements assures continued existence of natural habitats while simultaneously providing classrooms for realistic and effective military training on a sustainable basis.

(Excerpted from a Natural Resources Paper for NATO Conference – "Protection of Natural Habitats," April 2003.)

For the full paper or additional information, please contact Sandy Goss, Director of Public Affairs, U.S. Army Installation Management Agency, Europe at 011-49-6221-57-7549, DSN 370-7549 or e-mail: goss@s@IMA-e.army.mil

Wolfgang Grimm works for the U.S. Army Installation Management Agency, Europe Region Engineer Division, Environmental Branch, in Heidelberg, Germany. **PWD**



Army Environmental Program implements E-business using AKO

by Kathleen Bartholomew

The Office of the Director of Environmental Programs (ODEP) is making full use of Army Knowledge Online (AKO) to implement E-business. The Army Environmental Knowledge Center has the latest in environmental program news, as well as policy, data call, informational, and AR documents posted according to subject matter. Other features include links to other websites, a calendar, Leadership Trip Reports, and a review/feedback center. The Knowledge Center is intended to be a "one-stop shop" for The Army Environmental Program.

The Army Portal, AKO, is a primary component of The Army Knowledge Management (AKM) Strategy and The Army Transformation. The Secretary of The Army and Chief of Staff of The Army mandated that major commands, regions, and functional areas streamline business processes and "webify" their application on AKO. AKO is available to Active Duty Army, Army Reserve, Army National Guard, Department of The Army Civilians, Retired Army, and Army sponsored Guest Accounts.

The AKM Guidance Memo from the Secretary of The Army and the Chief of Staff of The Army states that all Army individuals are to have an AKO account by 1 October 2001. If you do not have an account, access AKO at www.us.army.mil. To register, click on "I'm a new user" link and fill out the application. For more information, call 1-877-AKO-USER or 1-877-256-8737.

The Army Environmental Knowledge Center contains the following sections:

- ODEP Leader Message: The ODEP Leader Message has a message from the current Director of Environmental Programs, COL Richard A. Hoefert, reference The Army Environmental Program's Vision and Strategy.
- Environmental Calendar: The Environmental Calendar has conference and training opportunity dates as well as

other significant activities, such as Earth Day, noted.

- ODEP Collaboration / Information Center: The ODEP Collaboration / Information Center lists each of the four divisions (Cleanup, Foundation, Sustainability, and Training Support) by which ODEP manages business. When a division is selected, a list of subjects appear with relevant reports, briefs, ARs, as well as policy, information, and guidance documents listed under them, all available for viewing, printing, or downloading.
- Environmental Links: The Environmental Links Center allows a user to access other web sites such as the Army Environmental Center, DENIX, and EPA.
- ODEP Information: The ODEP Information Center includes an organizational chart and Point of Contact list.
- Leadership Trip Reports: Leadership Trip Report Center allows a viewer to see what data/information is given to Senior Leaders prior to visiting an installation. The data contained in these reports is obtained from current Army reporting systems such as the Environmental Quality Report and Installation Status Report, Environment.
- Review /Feedback Center: The Review/Feedback Center is designed to allow

users to view and comment on draft documents. This center serves as a central repository for comments on draft documents.

To access the Army Environmental Knowledge Center, go to www.us.army.mil and sign in. Next, click on Special Staff/FOA located on the far left side of the page and choose the ACSIM link. The Army Environmental Program link is at the top of the ACSIM page, just click on it and you are there. Additionally, at the top of the Army Environmental Program page, there are links to the Army Environmental Center and the Installation Management Agency, Environment. The accompanying graphic shows how the Army Environmental Knowledge Center is set up.

The Army Environmental Knowledge Center is intended to be dynamic and accommodate The Army Environmental Programs informational needs. If you have any suggestions for improvement, please contact the Point of Contact (POC) below.

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Kathleen Bartholomew is a Sustainability Division team member, Office of the Director of Environmental Programs, ACSIM. **PWD**



Army Environmental Knowledge Center main page.



Army implementation of Environmental Management Systems

by David P. Giffin

EMS and EnvironEMS and Environmental Program Evolution

The Army has a mature environmental program that has led to vast improvements over the past several years. It now faces many new and complex challenges, such as encroachment, sustainability of its active ranges and infrastructure, and transformation of doctrine and weapon systems.

In addition, the Army still confronts many internal challenges to managing an environmental program of its size and scope. Interoperability among installation programs, leadership involvement, and awareness training are just a few of the internal weaknesses that can be addressed by an effective Environmental Management System (EMS).

A standardized environmental management model, such as EMS, will allow Army installations to methodically support the mission needs of its tenant organizations. It will also help to standardize best practices and improve performance. EMS alone will not provide a magical solution to all of the Army's environmental issues. However, it will facilitate employee practices that lead to more informed decision-making, and ultimately yield an improved readiness.

Prioritization of Risks and the Mission Focused EMS

Among the characteristics distinguishing the EMS approach from previous models are increased employee involvement, heightened management visibility and continual improvement. One characteristic, however, stands out above all others – environmental initiatives under an EMS are driven by risk assessment rather than regulatory requirements. An EMS is designed to manage, reduce and, where possible, eliminate risks to the environment and to the organization. Regulatory requirements continue to determine the baseline program elements, but they are no longer the primary drivers.

The organization is expected to identify, evaluate and prioritize its risks so they can be effectively managed through the EMS. Conceptually, this moves environmental action from defense to offense; from a reactive posture to a proactive one. No element in the EMS paradigm is more important. It requires all members of the organization to change attitudes and embrace a vigorous activism not usually accorded to environmental exposures.

The identification of environmental aspects and impacts becomes, essentially, the identification, evaluation and prioritization of environmental risks -- both risks to the environment and risks to the organization's mission. In the Army, it is absolutely essential that issues with the potential to affect or disable the mission get priority. To focus on mission during the identification of significant environmental aspects promotes the commitment to and ownership of environmental issues throughout the chain of command.

Applicable EMS Requirements

In April 2000, President Clinton signed Executive Order 13148, "Greening the Government through Leadership in Environmental Management," requiring an EMS at every appropriate federal facility by Dec. 31, 2005. The Army will meet this requirement by adopting the internationally recognized EMS standard, ISO 14001. The Deputy Assistant Secretary of the Army (Environment Safety and Occupational Health), in a July 13, 2001 memo, directed all Army installations to begin implementing ISO 14001 requirements by fiscal year 2004, and to have an EMS in place by the federal deadline. The Army requires full conformance with ISO 14001 by fiscal 2009.

To assist installations, the Army has undertaken a broad EMS implementation plan including policy and guidance, program funding, training, tools and assis-

tance, communication, and verification of progress. At the current stage, guidance and training are most important. The following section describes the status of related initiatives.

HQDA Delivery of EMS Guidance and Training

Headquarters, Department of the Army, and the U.S. Army Environmental Center (USAEC) are finalizing Army-specific guidance to help installations implement EMS. Due in late spring, 2003, "An Implementers Guide for Army Environmental Management Systems" will explain specific Army policy and describe protocols specific to Army and garrison issues and operating requirements. It will offer step-by-step guidance on the entire EMS implementation process. Most importantly, it will focus on procedures that allow EMS to best support the Installation's mission.

Also scheduled for late spring is an "Army Commander's Guide to Environmental Management Systems." This will focus specifically on actions that should be taken by the Garrison Commander to successfully implement and sustain an effective EMS. The implementer and commander's guides will form the foundation for standardized EMS training across the Army.

There have been many EMS training initiatives across the Army. All have fulfilled a crucial need for the Army to quickly learn how to implement this new system.

Now that the Army has had sufficient time to understand and describe a mission-focused EMS through EMS guidance, centralized training products reflecting this guidance are being developed and rolled out through the U.S. Army Engineer School. These training packages, to be completed early this summer, will be customized for various types of installation audiences. Planning has begun for EMS training sessions this summer at several locations across the Army. As soon as



New support services contracts available to all CADD GIS Technology Center partners

The CADD/GIS Technology Center recently awarded two Blanket Purchase Agreement (BPA) contracts for CADD, GIS, Facility Management, Environmental and Infrastructure Services and other related Information Technology Services. The awards were made to Michael Baker Jr., Inc. and InStep Software, LLC. Both companies provide a wide variety of services for these technologies and have significant experience in these fields.

Both contracts were competitively awarded; therefore, no further competition

is required when customers place orders with either company. The contracts are also extremely cost effective with labor rates substantially below respective GSA schedule rates and containing all labor categories.

The contracts are immediately available to all Center partnering agencies, which includes all Army installations. All U.S. Army Corps of Engineers Contracting Officers are preauthorized to place orders. Other partnering agencies need only request a Delegation of Procurement

Authority (DPA) from the Vicksburg Consolidated Contracting Office (VCCO), the Center's contracting agent.

All information, for both users and contracting personnel, is available on the Center's web site at <http://tsc.wes.army.mil> under the main bar entitled CONTRACTS. In addition, detailed information about each company and its services and capabilities is available.



(Reprinted from the CADD GIS Technology web page.)

POC is Jean McGinn, (703) 428-7479 DSN 328, e-mail: jean.a.mcgin@usace.army.mil **PWD**

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plans are finalized, an announcement will be made through the IMA Regions.

The Engineer School will also be working to integrate these training packages and EMS concepts in general into all appropriate Army and Joint doctrinal publications and references.

What Can Installations Do Now To Jump Start Implementation?

Although implementation dollars are not being programmed until fiscal 2004, installations can and are doing several things to prepare for EMS implementa-

tion. In fact, lessons learned from pilot studies tell us that most EMS elements are already in place across DoD. Our challenge now is to integrate programs and make them function systematically.

Doing some of the following tasks ahead of time will allow for more effective implementation down the road:

- Identify an EMS Management Representative - put best and brightest people on the task.
- Leverage headquarters investment - use centrally funded guidance, training, tools, information technology systems.

- Establish leadership awareness and commitment.
- Define mission and leadership priorities.
- Perform a self assessment to identify what is missing.

For more information, please contact Martin Elliott, Office of the Director of Environmental Programs at (703) 693-0552, or e-mail: martin.Elliott@hqda.army.mil

David P. Giffin is a Booz Allen Hamilton associate supporting the U.S. Army Environmental Center Integration and Installation Support Office **PWD**



New web site for Army solid waste and recycling

by Stephen Cosper

As soon to be published Public Works Technical Bulletin (PWTB) describes new web site and email list for Army Solid Waste and Recycling (ASWR) personnel.

In all disciplines, it is important to share information and discuss topics related to solid waste and recycling with your colleagues. The sharing of information saves time and money as it takes advantage of similar experiences among your peers and is a way to take advantage of "lessons learned."

The Army Solid Waste and Recycling (ASWR) web site (hosted by DENIX) provides an information exchange forum for solid waste and recycling professionals at all levels of the Army. Sections of the site include: documents, meeting minutes, policy, training, announcements, and a calendar.

A descriptive PWTB will be located on the USACE TechInfo web page at <http://www.hnd.usace.army.mil/techinfo/CWP/pwtb.htm>.

The web address for the ASWR site is <https://www.denix.osd.mil/aswr>. To access this site you must have a DENIX login and password. To acquire these, go to <https://www.denix.osd.mil/denix/register.html>.

DENIX serves as the DoD's central location for the distribution of environmental news, policy, and guidance. It is highly recommended that all Army personnel in environmental positions obtain and DENIX login and take advantage of this excellent resource.

The ASWR site is open only to users with DoD logins. A parallel, limited site has been set up for public viewing at <https://www.denix.osd.mil/aswr-public>.

A related system is an e-mail list server for discussion of solid waste and recycling topics. Please go to the above web site to subscribe to the list or contact the CERL POC below.



For more information about the web site or e-mail list described, please contact Stephen Cosper at ERDC-CERL, (217) 398-5569, e-mail: s-cosper@cecer.army.mil, or Malcolm McLeod at HQ USACE, (202) 761-0206, malcolm.e.mcleod@hq02.usace.army.mil

Stephen Cosper is a principal investigator in ERDC-CERL's Installation Division. **PWD**

Army combines restoration reporting systems

The Army's two major environmental restoration reporting systems merged in February with the release of the Army Environmental Database – Restoration (AEDB-R) as a secure Web-based application.

AEDB-R replaces both the Defense Site Environmental Tracking System and the Restoration Cost-to-Complete System. It is a real-time, Web-based software application supporting the collection, accessibility and management of the Army's environmental restoration program.

AEDB-R contains all the functionality of its two predecessors. "The field has been asking for this for years," said Nancy Kosko, of the U.S. Army Environmental Center Information and Environmental Reporting Division.

AEDB-R represents the first Army reporting module under the Army Environmental Database (AEDB) structure. AEDB is the centralized and integrated collection of Army environmental data that allows commanders and environmental managers at all levels to retrieve and work with information through a secure interface.

AEDB-R opened for data entry on February 18. The spring data submission is due to oversight reviewers April 16. Those reviewers must submit data to USAEC by May 1. USAEC manages the data for the Department of the Army Headquarters.

"AEDB-R is the tool we are going to use to report restoration data to DoD," Kosko said. "Ultimately it will be used throughout the entire centralized restora-

tion program."

AEDB-R offers installation staff the ability to enter and revise cost-to-complete estimates and import Remedial Action Cost Engineering Requirements (RACER) estimates.

It automatically generates phase information. It also allows online phase-to-phase validation of required and programmed dollars. Site installation and BRAC data submission readiness checklists are available on AEDB-R. More than 100 standardized reports are also available.

The data submission process through AEDB-R reflects the post-transformation reporting hierarchy. Archived data sets are available through that hierarchy.

The software also promises to be easy to use, with interactive help and search fea-



Automated template for solid waste plans

by Stephen Cosper

A recently published Public Works Technical Bulletin (PWTB) will assist Army solid waste managers in preparing or reviewing Integrated Solid Waste Management Plans (ISWMP) for their installations.

ISWMPs are valuable tools in that they require you to holistically examine and document an installation's solid waste program. Even a seasoned manager may learn something by taking a methodical look at the program. Further, AR 420-49 requires installations to prepare and update their ISWMP.

The automated template for ISWMPs presented in this PWTB is an MS Access 2000 database file while prompts the user for solid waste data and information in a logical sequence. The information asked for was determined by regulatory requirements, other guidance, and experience in solid waste planning. In some cases, the template helps to calculate information, as illustrated in the figure below. The user can enter actual data, or have the software estimate solid waste composition on a per capita basis.

Once all the data is entered, the Template exports the plan to an MS Word file for further editing or customization per the users requirements.

PWTB 200-1-15 is available from the

Edit Section 2.2.2.2

Document Name:

Long Description:

Section 2.2.2.2

Complete the table. If you wish, you may have the program provide default waste volume values for you based on national averages. Use the "Provide Defaults" button to the right. These values may then be edited as needed.

Sort Down ▼	Yearly Waste Generation (In Tons)	% Waste That Falls In this Category	Amount Recovered (In Tons)	% Recovered
Newspaper	0	0.0%	0	0.0%
Office Paper	0	0.0%	0	0.0%
Third Class Mail	0	0.0%	0	0.0%
Corrugated Cardboard	0	0.0%	0	0.0%
Other Paper	0	0.0%	0	0.0%
Glass	0	0.0%	0	0.0%
Ferrous Metals	0	0.0%	0	0.0%
Aluminum	0	0.0%	0	0.0%
Other nonferrous	0	0.0%	0	0.0%
PET	0	0.0%	0	0.0%

USACE TechInfo web page at <http://www.hnd.usace.army.mil/techinfo/C/PW/pwtb.htm>. The link "PWTB 200-1-15" is a PDF file with the official PWTB letter. The link "PWTB 200-1-15z" is a zip file that contains both the ISWMP database template and a PowerPoint tutorial.

U.S. Army CHPPM has also produced a guide for preparing ISWMPs. It can be found at <http://chppm->

www.apgea.army.mil/gwswp/tg%20197/index.htm

For more information about solid waste planning, please contact Stephen Cosper at ERDC-CERL, (217) 398-5569, e-mail: s-cosper@cecer.army.mil, or Malcolm McLeod at HQ USACE, (202) 761-0206, e-mail: malcolm.e.mcleod@hq02.usace.army.mil **PWD**

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tures. Training in its use began in mid-February.

The interface was "beta" tested at USAEC, Pueblo Army Depot, Colo., and Rock Island Arsenal, Ill. Developers will base future upgrades on user feedback and the recommendations of a software user's group.

USAEC intends to integrate the Military Munitions Response Program into AEDB-R by the end of 2003.

"We hope this is going to be a man-

agement tool as well as a reporting tool," Kosko said. "Because of its real-time nature, it could be used as a management tool." Keeping separate systems for management and reporting might not make much sense with AEDB-R in the picture, according to Kosko.

For more information on AEDB-R training, please contact Javier Vasquez at 410-436-1525. For other information, call (800) 872-3845. **PWD**

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DENIX WebSearch: full-text searching offers powerful tool for environmental managers

by Todd Littell

With the proliferation of data on the web today, the need for efficient and smart digital tools has become ever more apparent. Both the public and private sectors have proactively placed electronic information on the web and have generally accepted the web as an invaluable resource.

Traditional Information Access (IA) methods, such as hypertext navigation and meta-index navigation, are being pushed to their usability limits by the current data explosion. To this end, keyword searching has become the most prevalent IA method for both internal intranets and the Internet as a whole.

What Is DENIX?

The Defense Environmental Network and Information eXchange (DENIX) is a DoD web site that provides timely access to Environment, Safety, and Occupational Health (ESOH) information. Because DENIX hosts over 760 megabytes of data (in diverse data formats), a critical function is the DENIX WebSearch search engine. The DENIX WebSearch is a powerful search engine that was specifically designed and developed for the DENIX web site by the U.S. Army Engineer Research and Development Center (ERDC).

The Power of DENIX WebSearch

The DENIX WebSearch allows full-text searching of DENIX and 58 ESOH-related web sites. WebSearch currently indexes more than 1,000,000 documents totaling to 22.3 gigabytes of data. The data being indexed includes formats such as plain text, HTML markup, MS Word, MS Excel, MS PowerPoint and Adobe PDF. Further, both static web pages and dynamic, database-driven web pages are indexed.

Providing instantaneous access to such a large and rich repository of data makes DENIX WebSearch the most used DENIX function. There are some 6,400



DENIX search operations performed each month.

WebSearch provides users the opportunity to execute full-text searches using either Boolean queries (e.g., "heat loss or energy sinks") or Natural Language queries (e.g., "How does one design an environmentally responsible facility?"). The search engine will find all matching documents in this federation of web sites and rank them using an Intelligent Ranking mechanism. The Intelligent Ranking mechanism judges the relevancy of found documents according to multiple ranking criteria. The effect of this Intelligent Ranking mechanism is that the documents deemed to be most relevant are displayed at the top of a user's search result list.

In addition, users can construct Natural Language search queries, such as general phrases, statements or questions. The search engine uses a dynamic evaluation technique during search execution to determine the closest matching documents. This feature is analogous to another popular web search engine that encourages you to ask questions.

The user can control the domain of the search operation by specifying "domain criteria." The domain control allows one to narrow or broaden the scope of the search operation. The user can allow the search to be performed over "DENIX & the Web," which is the conglomeration of DENIX and 58 related web sites (the default). Alternatively, the user can restrict the search operation to be performed over just the DENIX web site or a topical sub-domain of DENIX.

One more feature of the DENIX Web-

Search is the ability to further refine a Boolean search expression after it has been executed. Often a user's initial search criteria will be too broad and as a result will return too many documents. At the top of each search result page is the original search expression and a text box that allows additional keywords to be conveniently specified. As such the user can easily drill-down into the data set by constructing the search expression on-the-fly.

Future of DENIX WebSearch

The DENIX WebSearch is a state-of-the-art search engine that is heavily used among DENIX and ESOH communities. Given the ever-changing landscape of the web and the increasing pressure for professionals to operate more productively, search engines like this will continue to grow in importance for providing fast, efficient information access.

The DENIX web site was developed and is maintained by ERDC's Construction Engineering Research Laboratory (CERL). The DENIX website is available at <http://www.denix.osd.mil>. Qualified individuals, such as DoD or DoD-sponsored employees, may register for DENIX accounts at <http://www.denix.osd.mil/denix/register.html>.

For more information, please contact Todd Littell at 217-352-6511, ext. 7677, or e-mail: t-littell@cecer.army.mil

Todd Littell is a principal investigator at ERDC-CERL in Champaign, IL. **PWD**

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Change in Sustainable Design and Development (SDD) policy

Memorandum, USACE, dated 04 February 2003, SAB, directed that all FY06 projects achieve Silver level of SPiRiT. Subsequently, Memorandum, ASA (I&E), subject: Sustainable Design and Development Requirements, dated 18 March 2003, directed Gold level for FY06 projects.* Effective immediately, all FY06 and future Army MILCON projects with final design (Code 6 or 7) authority issued after the date of this memo shall achieve Gold level. To the extent possible, Districts are encouraged to achieve Gold level in ongoing designs.

Reference 1.a directed that all FY06 projects achieve Silver level of SPiRiT. Subsequently, reference 1.b directed Gold level for FY06 projects. Effective immediately, all FY06 and future Army MILCON projects with final design (Code 6 or 7) authority issued after the date of this memo shall achieve Gold level. To the extent possible, Districts are encouraged to achieve Gold level in ongoing designs.

Beginning with FY06 projects, all USACE Districts are required to report on SDD measures in PROMIS. The PROMIS team is working on a system modification to add a 'SPiRiT' drop down list for selection of bronze, silver, gold, platinum and N/A and a specific 'SPiRiT' comment field to provide for an appropriate SDD/SPiRiT description/comment. Detail instructions will be forthcoming when software modification is ready.

We are preparing a template to identify increased design and construction costs attributable to achieving Gold level of SPiRiT. This template will be made available to Districts for use in preparation of 3086s for FY06 projects and 1391s for future projects. Districts are required to use this template to capture additional costs of SDD measures beyond Silver level of SPiRiT. We are analyzing four FY02 and 03 projects to estimate such additional costs and will distribute results when available.

The Secretary of the Army has asked OACSIM and USACE to select 10 proj-

ects for SDD showcase status in FY03 and to increase the number by 2 each year thereafter. Enc.1 lists selected projects for showcase status for FY03, 04 and 05 Programs. NWD, NAD, SPD and SWD are requested to nominate one project each for FY03 program by 1 May 2003 to satisfy the required numbers. If additional nominations are not received, HQUSACE will select appropriate projects and will advise accordingly. Districts should attempt to achieve Gold level of SPiRiT for these projects.

SDD Showcase Projects:

1. FY03 Program (Goal -10 Projects):

48707 Ft Benning Barracks Complex, Ph 1
041631 Ft Bragg Barracks, Armistead
048674 Ft Campbell Barracks, Range Road, 1
052068 Schofield Barracks, Barracks Complex, Foote Ave-C
057341 Ft Wainwright, Mission Support Training Facility
55837 Ft Detrick, Community Support Center.

2. FY04 Program (Goal-12 Projects):

58604 Ft Huachuca, AFH
57785 Ft Wainright, AFH
58677 Ft Knox, AFH
34082 White Sands, AFH
51112 Ft Campbell, Barracks Renewal PH2
34048 Schofield Barracks, Info System Facility
53321 Ft Gillem, Special Purpose Facility (2nd Recruiting Brigade Admn. Facility)
54214 Barracks, Camp Casey
53513 Barracks Renewal, Ft Richardson
44794 Barracks, Ft Lewis

44122 Barracks Complex, WSAAF, PH 1, Ft Drum
23652 Barracks, Ft Hood

3. FY05 Program (Goal-14 Projects):

57069 Ft Huachuca, AFH
57073 Ft Richardson, AFH
57070 White Sands, AFH
57041 Yuma Proving Ground, AFH
59074 Senior Leaders Quarters, Camp Casey
52263 WBR Phase 3B, Schofield Barracks
51174 CGSC, Ft Leavenworth
33409 Barracks Complex, WSAAF, PH 2, Ft Drum
45190 Command and Control Facility, Ft Irwin
58799 CSG Barracks, Ft Campbell
36403 5th SFG Barracks, Ft Campbell
44795 Barracks, Ft Lewis
56449 Lewis and Clark Instruction Facility, Ft Leavenworth
53608 Barracks, Ft Carson

**Note: These memos may be found at <http://www.hq.usace.army.mil/cemp/cempm/pmdpolicy.htm>*

POC is Harry Goradia, HQUSACE, (202) 761-7755, e-mail: harry.goradia@hq02.usace.army.mil **PWD**

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Fort Bragg takes sustainability framework beyond boundary lines

by Lynda S. Pfau

Always at the forefront, Fort Bragg recently took steps at the Sustainable Sandhills Executive Seminar and Luncheon to take the framework of Sustainable Fort Bragg, the installation's strategic environmental sustainability program, to the counties and municipalities that make up the Sandhills region of North Carolina.

"Fort Bragg is on a journey — no, a crusade — to become a sustainable installation — but we cannot continue on our journey alone," said COL Addison "Tad" Davis, Fort Bragg Garrison Commander, in his remarks to more than 165 participants. "We need you, the change agents in your organizations, to commit to a vision of a Sustainable Sandhills. What is that vision? What will a Sustainable Sandhills look like? What are the challenges that must be addressed and how will we as a

region overcome them?"

The seminar, co-hosted by Secretary William G. Ross, Jr., North Carolina Department of Environment and Natural Resources, and COL Davis, pulled together city, municipal, county, state and federal executives from throughout the region. Guest speakers included Meg Scott Phipps, Commissioner, NC Department of Agriculture and Consumer Affairs; officials from the North Carolina Department of Transportation and the North Carolina Department of Commerce; as well as internationally renowned sustainability authors, Brian and Mary Nattrass ("The Natural Step for Business" and "Dancing with the Tiger").

"Air and water don't have boundaries," Davis said. "Economic development, tourism and transportation — each is impacted by resources and decisions about those resources.

We don't live in a bubble. What we do affects those around us.

Secretary Ross praised Fort Bragg for being a "national leader" on sustainability as well as the early successes of Sustainable Fort Bragg. Ross also stated that Fort Bragg could give the necessary momentum to a Sandhills-wide effort on dealing with these issues.

"There is no other strategy but sustainability," Ross said to the group. "We continue to get signals that the resources we thought were inexhaustible are exhaustible. Unless we find a way to deal with sustainability and conservation issues, we'll lose the uniqueness of this place (the Sandhills)."

Dr. Christine Hull, Sustainable Fort Bragg program manager, said she was extremely pleased and encouraged by the number of community, state and regional leaders who attended the seminar.

"The commitment shown by the leadership in our surrounding

counties and municipalities is evident by the level of attendance and leadership at this seminar," Hull said. "These are the regions visionaries — those folks willing to look beyond current constraints to become an architect for a thriving and prosperous region that our grandchildren will inherit. What a tremendous way for leaders to leave a lasting impact on the community!"

Bill McNeil, Director of the Division of Community Assistance, NC Department of Commerce, echoed the seminar's message of strength in a cooperative partnership.

"This conference," said McNeil, "holds the promise of some six counties working together toward one vision — a vision which must dispel the idea that growth and good stewardship of the environment can't co-exist."

In a time when training and land available for training on many military installations is impacted by environmental regulations, Fort Bragg has worked successfully at striking a balance between being good stewards of its resources while maintaining the readiness of the world's Premier Power Projection Platform.

Two years ago, Fort Bragg leadership took a proactive stand to ensure the long-term viability of the installation. Resource restraints, including restrictions on land use for realistic training due to encroachment and protection of endangered flora and fauna, raised questions as to Fort Bragg's ability to continue to meet the mission to maintain a well-trained and well-equipped strategic response force that can be deployed anywhere in the world within 18 hours. Within that two-year time span, the installation has succeeded in identifying its "environmental footprint," developing 10 goals centered on air, water, energy, education and construction to reduce that footprint, forming goal teams to develop objectives, and identifying specific projects and funding requirements to achieve those goals by partnering with organizations like The Nature Conservancy.

"We have to put the aggregate



Bill Ross, Secretary, North Carolina Department of Environment and Natural Resources, signs a Unity Pledge at the Sustainable Sandhills Executive Seminar and Luncheon at Fort Bragg.



Little Rock District embraces *green* design

by Laura Cameron

During National Engineer's Week, the Little Rock District of the U.S. Army Corps of Engineers learned about SPiRiT, a sustainable design rating system. SPiRiT which stands for Sustainable Project Rating Tool, was created by the U.S. Army to mirror LEED (Leadership in Energy and Environmental Design), a product of the US Green Building Council. SPiRiT assigns a numerical value to issues such as site runoff water quality, energy efficiency, worker comfort level, use of materials with low emissions, and management of construction waste.

"I tried to explain why building green is so important," Laura Cameron said of her presentation on SPiRiT to the Little Rock District. "We had some great discussion, including how to use life cycle analysis to determine the true cost of buildings. Everyone seemed interested, and I learned a lot, even thought I was the one officially speaking."

Cameron explained how SPiRiT is used and how the points are assigned, wrapping up with an example from a National Guard Building in Arizona. She also highlighted the cost of building an energy-efficient building compared to the cost of building a traditional building.

"I was happy to learn that building energy efficient doesn't mean that it is going to cost more," commented Larry McGrew, chief of Design Branch. "If a



Laura Cameron

building has more insulation, the heating and cooling system, doesn't need to be as large. There are a lot of trade offs."

After Cameron's introduction to green design, Gerald Cound from Heifer Project International talked about the different design features being incorporated into their World Headquarters facility in Little Rock. Cound described how they are placing vents at the base of the wall to heat and cool the building. Instead of having suspended ceilings, the building will have elevated floors, and sunlight will reach 90% of the building. The 10% that doesn't receive light are areas such as closets and

storage areas.

Further, the new facility will use bricks from a demolished building on the site to make pathways for their parking lot, Cound said. Bricks that are damaged beyond repair will be ground to make a permeable surface for the parking lot.

Cound also described how the site has been designed to handle a 10-year storm without releasing water back into the storm system. There will be a series of ponds and wetlands to handle the water. A bonus of the water handling system is bringing the nearby Arkansas river ecosystem closer to the building.

Overall the attendants felt the presentations were a success.

"I have always been interested in green design," said Donald Dunn, Chief of Engineering and Construction. "My wife and I are incorporating sustainable design concepts into our retirement home. I want Little Rock District to get more involved in sustainable design, not only on our military projects, but also in civil works." When asked if he was ready to build an award-winning project he said, "of course."

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Laura Cameron is a civil engineer with the Little Rock District. **PWD**

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interests ahead of individual interests," said Roger Sheats, Deputy Secretary for Environment, Planning, and Local Governmental Affairs, NC Department of Transportation.

Author Brian Natrass, concluded the conference with an abbreviated overview of sustainability and the myriad of levels at which sustainability can positively influence the daily quality of life. Natrass told the audience that many of us

don't really think about where items go when we "throw them away."

"Exactly where is 'away'," asked Natrass. "There is no 'away' when you're throwing something away. Fort Bragg is learning that the 'away' is right here (Fort Bragg)."

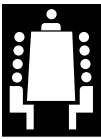
Seminar participants were encouraged to attend the next step in development of a Sustainable Sandhills initiative, a four-day training workshop on sustainability that will

be conducted by Brian and Mary Natrass.

For more information on Sustainable Fort Bragg or the Sustainable Sandhills Initiative, please contact Dr. Christine Hull, (910) 396-3341.

Lynda S. Pfau is an Environmental Resource Coordinator at Fort Bragg, NC.

(Maria Taylor, Corps PAO, contributed to this article.) **PWD**



Smart landscaping practices save water

by Richard Scholze

Summer is here and most DPWs have geared up to make sure their installation stays green and beautiful for the military community and its visitors. Before switching on those irrigation systems – now is a good time to think about conserving water.

The 1992 Energy Policy Act (EPA Act) requires that federal agencies implement all energy and water conservation measures with life-cycle cost paybacks of less than 10 years. Executive Order 13123 (Greening the Government through Efficient Energy Management) mandated the establishment of water and energy conservation goals for all federal agencies. As a result, the Department of Energy released documents that include guidance for water conservation. The Army (ACSIM) recently released guidance for implementing these water efficiency goals. Installations will be required to establish best management practices and prepare water management plans.

Most military installations maintain large expanses of green space: parade grounds, parks and athletic areas, athletic fields, golf courses, cemeteries, and landscaped grounds throughout the post. In most locations, traditional landscapes require supplemental water to thrive. To make up for the difference between a plant's water requirement and the natural precipitation in an area, it's usually necessary to irrigate.

Irrigation and landscaping have tremendous potential for water efficiency and conservation. One measure that can be used is xeriscaping, which is efficient use of water combined with appropriate selection of plant and landscaping materials. Xeriscaping can be used in any region of the country to create an attractive environment.

Water conserving strategies include:

- Change types of turf planted to use more efficient strains.
- Use native and other "climate appropriate" landscape materials.
- Use automatic controllers with rain and moisture sensors.



This new school at Fort Carson used xeriscaping to reduce water required by plants and turf.



Large areas of green space, such as parade grounds, can be assessed for water-saving opportunities.

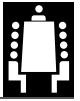
- Perform landscape audits to ensure the site is receiving appropriate amounts of water.
- Review contract performance specifications related to irrigation.
- Use sub-potable quality water to irrigate.
- Limit the areas to be irrigated.

Other measures to conserve water through landscaping include:

- Improve the soils' ability to collect and retain water (e.g., loosening compacted

soil, eliminating drainage problems).

- Control water falling on the area -- focus flow toward selected areas, i.e., collect it to use for irrigation vs. directing offsite
- Select low water use plant materials and group according to water requirements.
- Leave plants in water stressed condition (water just enough to keep plant alive but not in growth phase – usually in severe conditions only).
- Plant wind barriers.



Non-native invasive plant species pose challenge

by Heidi R. Howard

The Army is committed to improving and maintaining optimal training lands for soldiers by conservation of natural resources. Non-native invasive plant species (NNIPS) are a conservation and compliance challenge for cultural and natural resources management on military lands. Successful natural resource management is critical to the Army mission, as it represents the primary means of sustaining the carrying capacity of testing and training lands.

Invasion of NNIPS can lead to violations of the Endangered Species Act, Clean Water Act, Clean Air Act, Sykes Act, National Historic Preservation Act, as well as Army regulations and memoranda. Moreover, NNIPS negatively impact military operations, reduce military carrying capacity, compromise long-term sustainability of training lands, diminish training realism, and restrict training land availability.

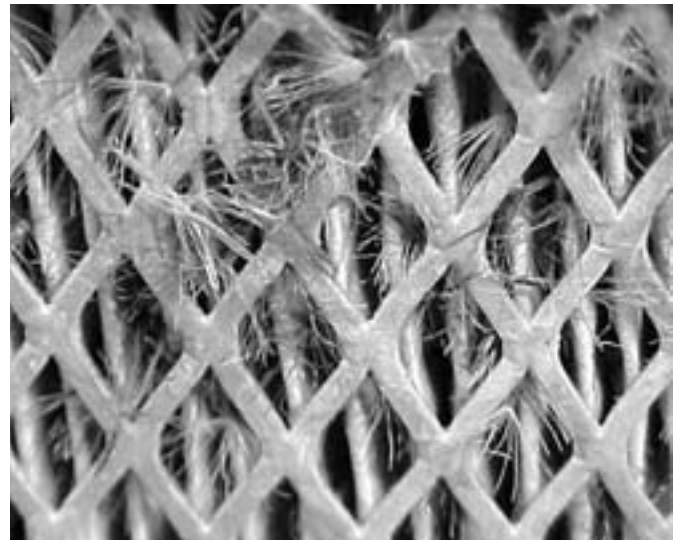
Without immediate and aggressive action targeted at identifying, mapping, monitoring, and controlling NNIPS on Army training lands, the magnitude of these negative impacts will increase significantly with time.

Funded by HQUSACE, the U.S. Army Corps of Engineers, Construction Engineering Research Laboratory has completed two Public Works Technical Bulletins (PWTB 200-1-18 and PWTB 200-1-19) that discuss issues faced by Army land managers. Both documents were developed

to increase awareness of NNIPS on military training lands and provide information and guidance, not policy, for the control and management of NNIPS.

The information within the two PWTBs is helpful to installations seeking a basic understanding of non-native invasive plant species that may be found within their region. Both documents provide a comprehensive list of non-native invasive plant species (NNIPS) for terrestrial non-aquatic areas that were derived from state, county, and Federal lists and expert opinions. Also included are basic overviews of the control, prevention, and monitoring of NNIPS that have proven successful.

PWTB 200-1-18, "Guidance For Non-Native Invasive Plant Species on Army Lands: Western United States," and 200-1-19, "Guidance For Non-Native Invasive Plant Species on Army Lands: Eastern United States," as well as many other aids and guides in various technical areas, are now available on the U.S. Army Engineering and Support Center, Huntsville Techinfo website:



Siam weed (Chromolaena odorata) in the air filter of a military armored personnel carrier after washing.
Photo by Stuart Henson, AQIS.

<http://www.hnd.usace.army.mil/techinfo/C PW/pwtb.htm>. The HQUSCE proponent for this PWTB is Malcolm E. McLeod, CEMP-RI, malcolm.e.mcleod@usace.army.mil

For more information, please contact the USAC-ERL POC, Heidi R. Howard, (800) 872-2375 x7601, e-mail: h-howard@cecer.army.mil

Heidi R. Howard is a Natural Resource Specialist at ERDC-CERL, currently working in military training land restoration and rehabilitation concentrating on erosion control and native species research. **PWD**

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- Alter cultivation, mowing, pruning and fertilization.
- Expand the use of mulching materials.
- Use anti-transpirants.
- Reuse wastewater for irrigation (you must be aware of water rights).
- Establish water priorities for droughts.
- Alter or adjust irrigation equipment or

practices to assure most effective efficient and economic application.

- Water harvesting -- either capturing stormwater runoff or using cisterns to capture rainwater as it falls.

While irrigation is a seasonal water use, DPWs can implement numerous other measures year-round to conserve water. For more information on this subject or help in developing water conservation or water management plans, water use evalua-

tions, leak detection surveys, etc., please contact Richard Scholze at ERDC-CERL, (217) 398-5590 or e-mail:

r-scholze@cecer.army.mil. A related technical report is available on the web at <http://www.cecer.army.mil/td/tips/pub/details.cfm?PUBID=102&TOP=1>.

Richard Scholze is a researcher in the Installations Division at the Construction Engineering Research Laboratory (CERL) in Champaign, IL.

PWD



Assessing water system vulnerability

In the United States, most people take the safety of their drinking water for granted.

But with the global war on terrorism in high gear, keeping it that way will take more than the standard treatment practices that eliminate dangerous bacteria and remove heavy metals.

Across the nation, water system operators now have an additional responsibility: anticipating and planning for acts of sabotage through physical attack or contamination.

Within the Army and Department of Defense, officials are taking that responsibility seriously and extending the reach of federal water protection requirements enacted following the terrorist attacks of Sept. 11, 2001.

As part of the U.S. Public Health Security and Bioterrorism Preparedness and Response Act of 2002, all community water systems serving more than 3,300 people must perform a vulnerability assessment and prepare or update its emergency response plan.

Vulnerability assessments detail potential threats, analyze those threats and provide a plan for risk reduction.

The Army developed a policy that requires all community water systems to perform vulnerability assessments and prepare/update emergency response plans. DoD plans to further extend the statutory and Army requirements to all types of drinking water systems serving more than 25 people, not just community water systems. This would include overseas systems that produce or purchase water, as well as consecutive, unregulated, non-community, and community systems in the United

States and its territories.

At present, DoD is in the process of finalizing its policy regarding vulnerability assessments and emergency response plans. The DoD policy will require individual Services, including the Army, to set time-frames and reporting schedules for any drinking water systems not originally subject to vulnerability assessments and emergency response plan requirements. U.S. Environmental Protection Agency compliance guidelines will still apply to DoD community water systems serving more than 3,300 people.

What you need to know about water system vulnerability assessments (WSVAs) and emergency response plans (ERPs)

The Public Health Security and Bioterrorism Preparedness and Response Act of 2002 amended the Safe Drinking Water Act to specify actions community water systems and the EPA must take to improve the security of the nation's drinking water infrastructure.

The act requires all community water systems serving more than 3,300 persons to certify and submit water system vulnerability assessments and certify completion of emergency response plans to the EPA by specified dates. See the table below for EPA compliance deadlines.

What does a Water System Vulnerability Assessment have to contain?

Vulnerability assessments serve to evaluate a water system's susceptibility to

potential threats and to identify corrective actions to reduce or mitigate the risk of serious harm from terrorist attack. The assessment:

- identifies potential threats to source waters, distribution systems, and treatment systems,
- provides an outline for the development of risk reduction options and associated costs, and
- provides a prioritized agenda for security upgrades and modification of policies and procedures.

Are water system vulnerability assessments protected information?

DoD Security of WSVAs information is paramount. For Army facilities, WSVAs are classified as "SECRET." The Army is currently evaluating the measures necessary to assure proper security for all actions associated with the WSVAs, including EPA submittal.

What does an Emergency Response Plan have to contain?

Emergency response plans must include:

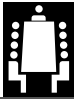
- Plans, procedures, and equipment to be deployed in the case of an intentional attack on the water system.
- Same measures for mitigation, and/or significant reduction, of any resulting water system impairment.

NOTE: Submittal of the actual ERP is not required, only submittal of the certification sig-

EPA WSVAs and ERP Deadline

Water System Type/Size	WSVA and Certification	ERP Certification
CWSs serving 100K or more	By 31 Mar 03	Within 6 months after WSVAs completion
CWSs serving 50K – 99,999K	By 31 Dec 03	Within 6 months after WSVAs completion
CWSs serving 3,301K – 49,999K	By 30 Jun 04	Within 6 months after WSVAs completion or





Constructed wetlands for wastewater treatment

by Bob Fenlason

Arrmy installations are mandated to meet the requirements of their National Permit Discharge Elimination System (NPDES) permits. These permits have become increasingly stringent as the United States strives to improve the quality of the nation's waters.

Constructed wetlands is one method Army installations are using to help cleanse wastewaters (including stormwater). Constructed wetlands are based on, but different than, natural wetlands. Wetlands are defined as land where the water surface is near the ground surface long enough each year to maintain saturated soil conditions along with the related vegetation. Marshes, bogs, and swamps are all examples of naturally occurring wetlands.

A "constructed wetland" is a wetland specifically constructed for pollution control and waste management, at a location other than existing natural wetlands. A plot of land is chosen near the wastewater that is to be cleansed. A shallow pond is built and native plants found in natural wetlands within the installation's region, such as cattails, reeds, and rushes, are planted. The wastewater is then routed through the wetland. Microbial utilization and plant uptake of nutrients, metals and other pollutants results in cleaner water leaving the constructed wetland.

Constructed wetland use has increased tremendously in application since the 1980s. Applications have been used to treat

municipal, domestic, industrial and commercial wastewater, landfill leachates, agricultural wastes, stormwater runoff, mine drainage, and combined sewer overflows. Constructed wetlands are desirable for these purposes since they are typically inexpensive to build, easy to operate, and capable of very effective treatment.

The U.S. Army Corps of Engineers, Construction Engineering Research Laboratory has prepared a Public Works Technical Bulletin (PWTB 200-01-21, "Applicability Of Constructed Wetlands For Army Installations"), to increase awareness of constructed wetlands on military installations. This PWTB contains an overview of constructed wetlands and their applicability to Army installations, giving a detailed explanation of this technology. It focuses on constructed wetlands for the treatment and polishing of wastewater and stormwater.

Because environmental laws differ among different jurisdictions, each wetland system must be designed individually to provide the appropriate hydraulic and biochemical mechanisms. These treatment mechanisms ultimately determine the success or failure of the system. Although constructed wetland technology has gained popularity in the United States, there is limited guidance on design and operation of constructed wetlands.

Both natural and constructed wetland systems have been used to treat a variety of

wastewaters. The information within PWTB 200-01-21 is helpful to installations seeking a basic understanding of constructed wetlands. The use of constructed, rather than natural, wetlands is generally preferred since all natural wetlands are considered part of natural water resources and have to comply with the water quality requirements of regulatory agencies. Other advantages of constructed wetlands include some degree of control of substrate, vegetation types, flow characteristics, flexibility in sizing, and the potential to treat more wastewater via engineering design.

PWTB 200-01-21, as well as many other aids and guides in various technical areas, are now available on the U.S. Army Engineering and Support Center, Huntsville Techno Website <http://www.hnd.usace.army.mil/techno/C/PW/pwtb.htm>.

The HQUSCE proponent for this PWTB is Bob Fenlason, CEMP-RI, 202) 761-8801, DSN 763-8801, bob.w.fenlason@usace.army.mil

For more information or assistance, please contact the USACERL POC, Rik Scholze, CEERD-CN-E, (800) 872-2375 x5590, Richard.J.Scholze@usace.army.mil

*Bob Fenlason is an environmental engineer at HQUSACE, Environmental Division, Environmental Support Branch. **PWD***

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nifying completion. ERPs are also classified as "SECRET" documents.

How do I learn more about the developing DoD policy?

Once the DoD WSVa policy is finalized, the Army will then format a new policy to incorporate the DoD requirements and provide additional guidance to installations. The Army's final policy will then be forwarded to the installations via the Installation Management Agency. If

you have any questions regarding the forthcoming Army WSVa policy, please contact Ms. Misha Turner via e-mail at Misha.Turner@aec.apgea.army.mil.

Where can I find more information?

The US Army Center for Health Promotion and Preventive Medicine (USACHPPM) offers several resources that will assist Army installations with WSVAs, including: a fact sheet on "Countering Terrorism of Drinking Water Sup-

plies", a WSVa protocol (Technical Guide 188 (TG 188), Food and Water Vulnerability Assessment Guide), and training of installation personnel to perform WSVAs. USACHPPM has performed assessments at several Army installations and can be contacted via email at water.supply@apg.amedd.army.mil.

*POC is Misha Turner, U.S. Army Environmental Center, 410-436-1203; misha.turner@aec.apgea.army.mil **PWD***



Temperature Data as an Energy Conservation Tool

by Troy M. Hull

In an effort to continue to reduce energy costs, property and facility managers struggle to find new tools to help conserve our precious resources. Structural improvements, energy efficient appliances, low flow water fixtures, etc., have all returned significantly on the investments made to put them in place. The addition of sub-metering systems helps to complete the loop by measuring usage to actually see the savings from the improvements. There are however more components that can be added to an energy conservation program.

The relationship between outdoor air temperature and indoor temperature for space heating or cooling is an important one that often goes overlooked in developing energy conservation plans. Many residents who live in multi-family properties

where utilities are included in rent do not understand that the greater the temperature difference between outside air and their indoor comfort zone, the more extreme the cost to provide that level of comfort. Add the fact that 60-70% of energy costs in residential and commercial office buildings is used for space heating and cooling and you have a tremendous opportunity for energy savings. Below are a few examples that demonstrate the significant impact temperature can play.

Based on these examples, it is clear that relatively minor changes in comfort level can have a significant impact on energy costs. The problem is that in order to have an impact on residents/user behavior, it is important to have data available to use to support conclusions. Energy management

service providers in the multi-family industry have collected outside air temperature data for use in substantiating energy costs, particularly when extremes of weather occur. However, until recently, the ability to collect indoor air temperature and integrate it into the overall scheme of energy conservation efforts has not been readily available.

Recently, the commercial multi-family industry has implemented this type of capability to manage vacant units, common areas, etc. The owner/manager has an incentive to keep costs low in common areas since he foots the bill. It has not been implemented in residential units since the resident retains the incentive to conserve.

This capability has an enormous fit for military base quarters/housing managers since they retain the financial responsibility for energy costs. Having temperature data available for housing units help to normalize data and add credibility to behavior modification interactions with residents.

Privatized military family housing managers could see this capability as tremendous resource for three reasons: First, the bulk of energy costs for their projects will be paid from a fixed BAH income stream. Second, the culture shock that will be associated with family housing resident responsibility for utilities can be averted somewhat if managers have solid data to back up commodity usage, particularly in extreme cases. Third, if implemented during the baseline development process, managers can assess the credibility of collected utility consumption data with respect to temperature information to arrive at more reliable figures. There is also evidence to support that there will be some conservation based simply on the fact that someone is monitoring use.

This type of capability is now being offered to development partners in the Residential Communities Initiative Program in conjunction with automated utility metering systems. Individual dwellings can be fitted with indoor temperature sensors that report readings to the building meter inter-

Heating Example

Assume that an average residence uses about 70 CCF of gas for heating in an average month.

Outside Air Temperature Average is 40 Degrees F

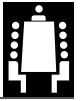
	Unit # 1	Unit # 2
Indoor Air Temperature	68 F	74 F
Delta from Outside Temp	8 F	34 F
Temp Difference in Units		6 F
% Difference		21%
CCF Gas Used	70 CCF	85 CCF
Cost CCF	\$.70	\$.70
Cost Unit	\$49.00	\$59.50
Savings Per Month		\$10.50

Cooling Example

Assume that an average residence uses about 540 KWHR for cooling in an average month.

Outside Air Temperature Average is 90 Degrees F

	Unit # 1	Unit # 2
Indoor Air Temperature	78 F	72 F
Delta from Outside Temp	12 F	18 F
Temp Difference In Units		6 F
% Difference		50 %
KWHR Electricity Used	540	810
Cost Per KWHR	\$0.06	\$0.06
Cost Per Unit	\$32.40	\$48.60
Savings Per Month		\$16.20



Documenting pollution prevention measures: new guidance supports collection, sharing

by Deborah Curtin



Deborah Curtin

A newly released Public Works Technical Bulletin (PWTB) helps installation environmental managers capture details about their pollution prevention

(P2) activities for consistent reporting and sharing lessons learned. The PWTB, published by USACE, includes a template that standardizes the data collected at Major Command installations.

The Pollution Prevention Act of 1990 states the national policy as: (1) prevent or reduce pollution at the source whenever feasible; (2) for pollution that cannot be prevented, recycle it in an environmentally safe way when feasible; (3) for pollution that cannot be prevented or recycled, treat it in an environmentally safe manner; and (4) dispose and/or release pollutants to the environment only as a last resort and do so in an environmentally safe way.

Pollution prevention is the Army's preferred approach to complying with

environmental laws and regulations. However, successful P2 activities at one installation often are not transferred to another site that could benefit. Further, some of the P2 investments made have not been validated as to their cost-effectiveness.

HQ USACE asked the Engineer Research and Development Center (ERDC) to develop the template for documenting activities while TRADOC and FORSCOM requested that ERDC collect

P2 documentation from their installations and develop guidance. PWTB 200-1-20, "Pollution Prevention: Lessons Learned," is the result. The bulletin includes information from several installations and prescribes an interactive investment template that will be used for all future P2 technology documentation.

To download a copy of the PWTB, go the USACE TECHINFO website, <http://www.hnd.usace.army.mil/techinfo/C>

PW/pwtb.htm. Malcolm McLeod, HQ USACE Environmental Division, is technical proponent for this work.

For more information, please contact Deborah Curtin at ERDC's Construction Engineering Research Laboratory, 217-398-5567, d-curtin@cecer.army.mil

Deborah Curtin is a researcher at ERDC-CERL's Environmental Processes Branch in Champaign, IL. **PWD**



Silver recovery system used at Fort Lewis, Washington.

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face module. Each module also has an outdoor temperature sensor recording outdoor air temperatures. The constant temperature inputs are then averaged to arrive at a daily average temperature for a given residence unit as well as a baseline delta from outside air daily average temperatures. This capability should not be limited to residential use. Base operators can benefit significantly from integrating this type of capability into their overall

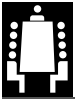
energy conservation plans.

Installation of temperature sensing equipment can normally be accomplished by using existing data or telephone wiring in existing housing/quarters during the course of sub-metering equipment installations. Costs to do such in conjunction with sub-metering are minimal. The added credibility of such a tool will pay many dividends as managers/operators continue to streamline housing operations.

POC is Troy M. Hull, (800) 637-4242 ext 219 or e-mail: troy@ebssystems.com

Troy M. Hull is the Vice President, Military Programs, for Energy Billing Systems, Inc., a Colorado Springs, CO, based firm working on energy metering and billing solutions with several private development partners across the spectrum of privatized military family housing.

PWD



Reduce demolition waste by recycling: new guidance for DPWs is here

by Tom Napier



Tom Napier

A newly published Public Works Technical Bulletin (PWTB) provides guidance for recovering, reusing, and recycling building materials typically disposed of as demolition waste.

PWTB 200-1-23, "Guidance for the Reduction of Demolition Waste Through Reuse and Recycling," will help Army installations implement practices to reduce the amount of demolition debris generated by removing surplus buildings.

The PWTB outlines procedural guidance and supporting documents for removing surplus buildings, while greatly reducing the debris deposited in installations' landfills or hauled to off-site landfills. Building deconstruction (the disassembly of a building for the purposes of recovering components and materials for reuse), salvage, and recycling methods are addressed.

It is important to note that no single strategy for waste diversion is applicable to all buildings, construction types, and locations. For this reason, several methods are described to address a range of project-specific conditions. PWTB 420-49-32, "Selection of Methods for the Reduction, Reuse, and Recycling of Demolition Waste," provides guidance on evaluating specific project conditions and assessing the feasibility of deconstruction, reuse, and recycling methods.

Construction and demolition (C&D) debris accounts for up to 80 percent of some installations' solid waste streams. This situation is most critical where an installation is removing large numbers of World War II-era wood buildings and where new construction programs require the demolition of existing facilities. Alter-

natives to conventional demolition and landfilling have proven that more than 75 percent of debris can be diverted from landfilling.

The new PWTB describes procedures for incorporating deconstruction, salvage, and recycling practices into building removal projects with the objectives of (1) reducing landfill burdens and (2) making better use of the resources available in surplus buildings. Five general strategies are described along with variations in each. The document provides sample deconstruction specification provisions, examples of solicitations to bid or auction surplus buildings, and a model Request for Proposal for removing buildings. It includes cost-related information for deconstructing wood-frame buildings.

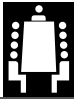
PWTB 200-1-23 will be posted on the TECHINFO website at <http://www.hnd.usace.army.mil/techinfo/CPW/pwtb.htm>. Malcolm McLeod at HQ USACE Environmental Division, was technical proponent for this work.

For more information about deconstruction and recycling, please contact Tom Napier at ERDC-CERL, 217-373-3497, t-napier@cecer.army.mil

Tom Napier is a researcher at the Engineer Research and Development Center's Construction Engineering Research Lab (ERDC-CERL) in Champaign, IL. **PWD**



Volunteers with Americorps and Habitat for Humanity deconstruct wood buildings at Fort Campbell, KY.



Construction and development of effluent guideline proposed rule

by Emily Muraro

Soil disturbed during construction, if not managed properly, can be easily washed off the site during storm events. These storm water discharges can cause an array of physical, chemical and biological impacts.

To reduce these effects, the U.S. Environmental Protection Agency (EPA) developed a proposed rule that will affect construction projects throughout the United States, including Army installations.

Effluent Limitation Guidelines and New Source Performance Standards for the Construction and Development Category; Proposed Rule (67 FR 42644) was published June 24, 2002. The proposed rule would apply to operators of construction sites required to obtain National Pollutant Discharge Elimination System (NPDES) storm water permits.

The proposal outlines three options for addressing the environmental problems from construction sites. The final rule will adopt one of these options or a variation thereof.

The first option, inspection and certification, would cover construction sites with one or more acres of disturbed land. This option would amend the existing storm water permit regulations by including minimum requirements for construction site inspections, certification of designs and completion of controls.

The second option, effluent guidelines, covers sites with five or more acres of disturbed land. This option includes minimum standards for the design and construction of erosion and sediment controls, minimum requirements for conducting site inspections, and certification of designs and completion of controls.

The third option calls for no further regulation.

EPA accepted comments on the rule through December 23, 2002. The signature date for final action is March 31, 2004. The existing national storm water regulations and permits require construction site operators to implement best management

practices to manage site runoff, but do not require any specific level of control. The regulatory options in the proposed rule, if promulgated, would add requirements to the NPDES storm water permits for construction sites. Building contractors will most likely pass the cost increase of the rule to the Army. However, the rule would probably have minor impact in states that already have requirements for inspections and erosion and sediment controls. Many states would have to revise their permit programs.

Under the inspection and certification option, EPA estimates compliance costs per acre of \$57 for single-family homes, \$59 for multifamily homes, \$74 for commercial buildings, and \$81 for industrial structures. Under the effluent guidelines option, EPA estimates compliance costs per acre of \$305 for single-family homes, \$319 for multifamily homes, \$312 for commercial buildings, and \$303 for industrial structures. Compliance cost for roads and highways is estimated at \$4,033 per mile under either option.

The Department of Defense Clean Water Act Services Steering Committee submitted comments on the proposed rule to the EPA. The committee's overall recommendation was that EPA adopt Option 3, no further regulation, because of the concern with the purpose and timing of the regulation.

The U.S. Army Environmental Center (USAEC) produced and distributed a regulatory analysis of the rule soon after it was proposed.

For a copy of the regulatory analysis or for more information please contact USAEC's Wastewater Program Manager, Mike Kanowitz, (410) 436-7068, e-mail:

Michael.Kanowitz@aec.apgea.army.mil; or Emily Muraro, Booz Allen Hamilton, Inc., (410) 436-7073, e-mail: Emily.Muraro@aec.apgea.army.mil

Emily Muraro is a Booz Allen Hamilton consultant supporting the U.S. Army Environmental Center Compliance/Pollution Prevention Branch. PWD

New developments

The new Army Installation Design Standards have been approved and are posted to the Hot Topics site on the ACSIM homepage at <http://www.hqda.army.mil/acsimweb/homepage.shtml>.

After approving the new Design Standards on April 22, 2003, the Vice Chief of Staff, Army, sent a message to all MACOM commanders and IMA Region Directors to immediately apply the Standards to projects at their installations. The new program will:

- Establish a level of standardization across all of our posts and garrisons.
- Foster a sense of community, order, tradition, and pride.
- Provide guidance on cost effective resource investment.
- Ensure sustainability, reliability, and efficiency in our installations' function and appearance.

In the next issue of the Public Works Digest, which will focus on Facilities Engineering, we will take a closer look at the new Army Installation Design Standards and their application, the development of the individual Installation Design Guides, and the projected short- and long-term implementation plans. Clearly, we have taken the first big step to raising our garrisons to the new heightened level of efficiency and standardization mandated for the entire Army.

POC is Larry Black, (703) 428-6173, e-mail: larry.black@hqda.army.mil PWD



Environmental symposium “sets the stage” for the future

by Jean Skillman

The first Army Environmental Training Symposium set a precedent for a new way of training environmental managers.

Held in Kansas City, Missouri, March 23-28, the symposium brought 335 Army civilians and soldiers to participate in 54 courses, the first of what organizers intend to make an annual event for the Army environmental professional community.

The U.S. Army Training and Doctrine Command (TRADOC) hosted the symposium with support from the U.S. Army Environmental Center (USAEC).

Opening sessions included presentations from the Installation Management Agency and Office of the Director Environmental Programs that also included an open forum to discuss emerging issues with the attendees and to listen to their concerns.

Training topics included environmental database programs, law and conflict management. Attendees also frequented the exhibit area to network and talk to contractors willing to help solve environmental issues while dining on breakfast and lunch buffets.

“I’m glad I attended. I feel that I’m more up to speed on issues and regula-

tions,” said Andy Poppen, chief environmental management office, 6th Area Support Group, Stuttgart, Germany.

TRADOC coordinators modeled the symposium after the Air Force Center Air Combat Command training program. They envision the symposium as providing a one-stop, centralized training forum for installation environmental personnel, installation stakeholders and others.

Holding the annual training event will bring many benefits said Susan West acting chief, TRADOC environmental office and coordinator of the symposium. “This is a key opportunity for the people from the field to communicate with the people in leadership positions,” said West, “This will also save money, make environmental training more efficient and help to get people out of their stovepipes.”

Students had the opportunity to attend the courses that were most important to them but were also required to attend mandatory training in Environmental Management Systems, general sessions and a few classes that offered insight into other programs.

“This year’s symposium set the stage for



Having made their plan of attack, students place their units to capture, the objective during the sandbox exercise at Army 101—a week-long class for environmental managers with little prior experience with the military.

Photo by Jamie Chambers

coming years,” said Stan Childs, USAEC planner for the symposium. “While we can say this initial symposium was a success, it will only become better and more useful to installations in the years to come.” Childs added.

Information about next year’s environmental training symposium will be announced throughout the year on the USAEC Web site <http://aec.army.mil/usaec/>

Jean Skillman is a Booz Allen Hamilton consultant supporting the U.S. Army Environmental Center Public Affairs Office. PWD

Real Property Master Planning training course revisited

by Jerry Zekert

The Real Property Master Planning Course, a USACE PROSPECT course, was conducted at the USACE Professional Development Support Center (PDSC) in Huntsville, Alabama, on 10-14 February 2003.

There were 26 students enrolled—21 from installations, 1 from the ACSIM, 1 from a USACE supporting district, and 3 from outside agencies including the Coast Guard and NIMA. Instructors included Louise Hicks, PDSC Course Manager, Carl Burgamy, Mobile District, J.D. Cubbage, Louisville District, and Lendy Wolner, HQUSACE.

The course provided an overview of the practice of Army Master Planning to include Army policies and guidance as well as the foundation principles of comprehensive community planning. As the HQ USACE Course Proponent, I presented several Master Planning initiatives, including:

- Critical Infrastructure Protection.
- Sustainable Planning.
- Land Use Controls.
- Management of Land Use Controls.

In addition, instructors discussed Army Master Planning roles and responsibilities

as part of the Transformation of Installation Management and professional development. Highlights of the update to AR 210-20, Real Property Master Planning and improved master planning awareness involving the Garrison Commander’s Pre-Command Course were also covered. The presentations included a video on Critical Infrastructure protection from OSD-C3I, a Sustainability video from GSA, and a visual demonstration of multimedia, web-based master planning products. Most students wanted an extra copy of the products for their office.

One of the most interesting things ➤



Southeast Regional Office (SERO) IMA holds Energy Managers Forum

by Dave Payson

The 2003 SERO/IMA Energy Managers Forum (EMF) was held February 24-26 in Atlanta, GA. Participants in the EMF included staff from IMA/HQ, energy managers from SERO/HQ and SERO installations, and staff from the Huntsville Corps of Engineers. Energy managers from Forts Drum, Hood and Riley also attended. Representatives from the Bonneville Power Administration, Southern Company, Silicon Energy, and Science Applications International were among the invited guest presenters. Pacific Northwest National Laboratory (PNNL), who provides technical support to the SERO energy program, organized this year's EMF.

The agenda for the EMF centered on topics of current interest to the energy managers, particularly relating to the organization and management of the new Department of the Army IMA structure. Other EMF topics included the development of installation (10-year) energy plans to achieve the goals of Executive Order (EO) 13123, funding and financing projects, new and emerging energy and water efficient technologies and tools, the Army's sustainable installation initiative, and a discussion of future directions in IMA/SERO energy program implementation.

Selected presentations were also given by installation energy managers. Luke Wyland, Fort McPherson described the



Cecil Goodwin, IMA/HQ, John Patton, SERO/HQ, and Gary Meredith, Fort Knox, during a break at first day of the SERO/IMA Energy Managers Forum.

operation of their recently installed fly-wheel that has completely replaced a battery backup system in Marshall Hall; Glenn Stubblefield discussed Fort Gordon's electrical peak shaving strategy for saving utility costs at the installation; Gary Meredith of Fort Knox talked about how the installation is working with their local electrical utility to finance and implement energy savings projects; Steve Rowley, Fort Drum highlighted a year-long demonstration of a 30kW microturbine at a barracks dining hall; Russ Goering presented his 10-year energy management plan for Fort Riley; and Fred Cavedo, Fort Stewart outlined the process and result of a lighting retrofit in helicopter hangars at Hunter Army Airfield.

Following the EMF, PNNL also hosted a 1.5-day training class for the energy managers in the use of the Facility Energy Decision System (FEDS©) software (www.pnl.gov/feds).

Copies of the Agenda and PowerPoint presentations from the SERO/IMA EMF are available for downloading at: <http://www.dev.pnl.gov/buildings/army.html>.

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Dave Payson is a senior communications specialist at the Pacific Northwest National Laboratory **PWID**

(continued from previous page)

that I observed during the class was the knowledge and experience that the students have in using personal computers as additional tools to doing their business. This was particularly evident during hands-on exercises that required them to work with maps in conducting site analyses. The students used their laptops and scanners to build planning overlays to identify trends and constraints in their proposals and then synthesize their analyses into succinct (PowerPoint) presentations.

The Real Property Master Planning Course continues to sustain its excellent reputation as a tremendous Army resource for providing Master Planning training to installations. The instructor team of senior, experienced Army master planners provide a tremendous wealth of experience to the students, who rely not only on the training material, but personal discussions with the instructors to create an exciting mentoring experience.

Nevertheless--due to the updating of the planning regulation, several new planning initiatives, the development of the Master

Planning templates, and the nurturing of the IMA operating procedures-- the course material requires updating. This update should be in-place for the 2004 Sessions.

The next course is tentatively scheduled for July 2003 in Seattle, Washington.

POC is Jerry Zekert, (202) 761-5789, e-mail: jerry.c.zekert@usace.army.mil

Jerry Zekert is the Master Planning Team Leader for the Installation Support Division at HQ USACE. **PWID**



Installation Management Institute (IMI) Master Planning support

by Jerry Zekert

Last year, Military Programs' Installation Support Division (ISD) and ACSIM's Plans and Operations Division (DAIM-MD) worked closely together in presenting several breakout sessions during the initial Installation Management Institute (IMI). For the 2003 IMI, which took place 13-17 January, ISD's Jerry Zekert, and Tracy Wilson worked closely with ACSIM Plans and Operations Division's Greg Brewer in conducting the following sessions:

- Master Planning General Overview
- Sustainable Planning
- GIS in Planning
- Critical Infrastructure Protection (CIP)
- Planning Collaborative Exercise.

These courses were well-received and allowed regional and installation personnel a unique perspective of the current Master Planning Initiatives facing the Army. Participants were also given an opportunity to review the Master Planning template website development, an ACSIM/USACE/Pacific Regional Management Activity project to build a web-enabled Army master planning support website.

Mr. Brewer and Mr. Zekert gave the students a seamless overview of the policies, procedures and implementation guidance on Army Master Planning. The course provided insight on the current and changing policies regarding Master Planning, new planning initiatives, an overview of planning tools and the requirements that installation master planners must provide in these new times.

Master Planning will be more focused on comprehensive area development to create excellent urban communities for our installations. Installation planning efforts will be focused on plans that are visionary in thought, comprehensive in implementation (i.e., sustainable and infrastructure assured) and well developed.

Installations and regions were also

apprised that USACE Supporting Districts are available to them. They need to get to know the Installation Support Officers at their Divisions as well as the PM Forwards. Many students were concerned about the cost for these services. We informed them that while USACE is a reimbursable activity, there are some funds available through their Supporting District/Division installation support program. This funding makes sure that when you need help, USACE is part of your team.

Ms. Wilson's presentation on GIS in Planning was a good complement to the other highly technical GIS IT presentations. The focus of her presentation was on why GIS is a critical planning analytical tool for meeting the Army's current master planning requirements and how to organize your installation to ensure effective installation-wide GIS acceptance and use.

In the current update to AR 210-20, Master Planning for Army Installations, the installation master planning activity is identified as the responsible office for the management of the foundation GIS information. With these tips and information, students were able to gain a fresh perspective on how to cost effectively implement a GIS system. About 200 students attended the two sessions.

Mr. Zekert's presentation on "Critical Infrastructure Protection (CIP)" provided a broad framework on what the CIP program is, why is it important and how it fits in with Anti-Terrorism/Force Protection. In addition to discussing the CIP methodology and how it relates to the Master Planning process, Mr. Zekert also provided the students several information CDs from OSD-C3I, the OSD CIP program manager. Infrastructure Assurance is one of the comprehensive sets of factors that go into installation development. Through a comprehensive "area development" focus, infrastructure assurance can be integrated into the development of the real property. Further, from a consistent infrastructure assurance approach to asset reliability,

AT/FP actions can be focused to the most critical, vulnerable assets.

Ms. Wilson's "Sustainability in Planning" breakout session enabled the students to understand the unique concerns regarding sustainability as it pertains to installation planning and development. She explained what sustainability is and how planning is the framework methodology to ensure our installations are sustained for the future. Sustainable planning concepts will be included into the updated AR 210-20, Army Master Planning. This breakout session was well received, and students understood the concept of integrating sustainability into our master planning process through comprehensive planning.

The four-hour "Planning Collaborative Exercise" was one of the most exciting exercises at the IMI, helping participants to understand the factors involved in developing an installation. Students started by building a planning vocabulary through a visual survey of what makes a great urban environment. This is very important in understanding how the urban environment is developed. Then, the students were allowed to participate in a siting exercise where they developed an area of an installation. Students worked on a model area with models of various facilities, using the planning values they learned in the first exercise-- develop/redevelop an installation.

It was amazing to see the number of students who initially just plopped the facilities down on the site without considering how they related to other activities in the community. This exercise was very effective and brought out how establishing a vision and strategy for development is the most important step in planning and siting facilities. The course manager for the Garrison Commander's Pre-command course participated in the exercise and was very interested in getting our garrison commanders to understand the planning process

Master Planning template development is one of the major objectives of the ►



NAD looking for new Planning Chief

The North Atlantic Division (NAD) is recruiting for the position of Chief, Planning and Policy Division (Interdisciplinary GS-15), North Atlantic Division. Current Chief Sam Tosi is retiring at the end of calendar year 2003, and the plan is to select and bring his replacement on board this summer allowing for several months of transition.

NAD has one of the most robust and challenging Civil Works programs in the U.S. Army Corps of Engineers with 17,000 miles of Atlantic Shoreline; 5 of the nations top 10 ports, including the New York Har-

bor which is one of the Administration's highest priority Civil Works projects; a healthy flood control program; and environmental restoration challenges that span diverse ecosystems from the Chesapeake Bay to the NY/NJ Harbor to Cape Cod and beyond. Our CONUS Districts, Norfolk, Baltimore, Philadelphia, New York and New England, are all healthy and viable business units. Europe District is also in our footprint, which adds to the excitement of NAD.

Living in the New York area can be an extremely fulfilling experience, with unique

opportunities to enjoy the northeastern United States, one of the most beautiful, exciting and historical regions in the country. The recruitment package will authorize relocation services. A relocation bonus of up to 25% of salary may also be authorized to the right candidate. We encourage all qualified GS-14 candidates to apply. May the best man/woman win!

For questions pertaining to this position, please call Tom Waters (718-765-7129) or Sam Tosi (718-765-7070). PWD

Environmental publication seeks material

The Corps Environment, the U.S. Army Corps of Engineers quarterly publication that focuses on environmental issues throughout the Corps, wants to hear from you.

The publication, which observed its two-year anniversary in January, keeps employees and other interested parties up to date on the Corps' environmental stewardship missions that include restoration, cleanup, pollution prevention, cultural and natural resources protection

and compliance.

Corps employees are encouraged to contribute articles about the environmental work they do and how they are incorporating the USACE Environmental Operating Principles into their projects and activities. The Corps Environment comes out in January, April, July and October with the deadline six weeks before publication, ie. Nov. 15, Feb. 15, May 15 and Aug. 15.

Copies are printed, e-mailed and avail-

able on both the Defense Environmental Network and Information exchange (DENIX) and the Corps' Environmental Division home page at <http://hq.environmental.usace.army.mil/newsinfo/current/current.html>.

For more information or to contribute material to The Corps Environment, contact Joan G. Burns at joan.g.burns@HND01.usace.army.mil PWD

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Army in implementing real property master planning to ensure there is a consistent quality installation planning products and support throughout the Army. ACSIM, HQ USACE and Pacific Area Regional Activity are building a web-based template for master planning products. The template will allow installations to download a standard format for all planning products as well as link to all existing sources for Master Planning guidance and support. The first template that is being developed is the Installation Design Guide, the next template will be for the Real Property Master Plan Digest

and others will follow.

We are using PARA existing master planning framework (PRISMs/MC2) development to build an exciting tool to help the Installation Management Agency in implementing a comprehensive master planning program second to none. During the workshop, PARA demonstrated some initial proof of concepts of the "templating" effort to Mr. Brewer and Mr. Zekert. The templating format was excellent, with easy-to-use web screens. More work will continue over the spring and will be embedded into the Master Planning Prospect course.

I think this year's IMI was a success. While the IMI training included a broad

set of breakout sessions that centered on overall installation activities, the highlight of these three sessions was the emphasis on master planning. Students were able to bring back lots of information and materials that can help them support their garrison activities.

The IMI also allowed the ACSIM and USACE Master Planning team to engage with installation/Region Planning personnel, promote dialogue and create close partnerships throughout the Army.

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Civilian ATLDP recommendations move forward

by Joe Burlas

Creating a Civilian Advisory Board to be an advocate for today's more than 270,000+ Army civilian workers will help level the training and leader development playing field with the uniformed component of the Army, according to one finding of a recent study.

The Army Training and Leader Development Panel Civilian study, released March 13th, mirrored earlier panels that examined the Army culture, and training and leader development views of the officer, warrant officer and NCO corps during the past two years.

The studies were conducted as part of Army Transformation in order to shape the Army's workforce for future requirements, officials said. The civilian study was the last planned ATLDP, yet work continues to resolve issues identified from all the studies.

"We knew going in what most of the issues were concerning civilian training and leader development -- the study just confirmed them and provided us with the necessary data to validate the need for change," said Maureen Viall, Civilian ATLDP study director.

Through the use of written and online surveys, focus groups, and one-on-one interviews with Army civilians, garrison commanders, General Officers and Senior Executive Service members, the panel got feedback from over 40,000 respondents.

Viall said the study confirmed that Army civilians were aware that the Army is undergoing profound change as it transforms into the future Objective Force and that they didn't want to be left behind. What that means, she said, is that the future civilian workforce needs to be multi-skilled, multi-faceted - not tied down to doing just one job under a civil service position classification system that is more than 50 years old.

Most General Officer and SES respondents agreed that the current education system is inadequate to develop civilian leaders capable of managing the change Transformation requires.

The study confirmed there are no

sequential civilian leader development plans like soldiers have. In fact, only 45 of 444 employees in study focus groups could name a specific leader development course offered to civilians -- 223 of the group were unaware of any core leader development courses. However, 80 percent of the respondents who had attended a leader development course indicated such courses were beneficial.

Another issue from the study is the failure of many civilian supervisors and managers to attend required leader development courses. Reasons for failure to attend include low command priority for civilian training, lack of time due to mission requirements, lack of money and no consequences for failing to attend mandatory courses or any meaningful recognition for attending.

Training opportunities, whether for professional or leader development, vary widely from major command to major command, according to respondents. The issue here is that most civilian training is currently funded out of each MACOM budget. A few exceptions to that rule include centrally funded leadership training at the Center for Army Leadership and the Army Management Staff College.

"It is a case of the haves versus the have nots," Viall said. "There are generally more training opportunities in better funded MACOMS than in the poorer ones."

Respondents used words like "meaningful, challenging, interesting, exciting, fun and rewarding" to describe their jobs. Almost 90 percent said they plan to make the Army a career, with only 2 percent stating they planned to leave Army service before retirement. More than 70 percent said they would recommend working for the Army to others.

However, many respondents said they would like more recognition for being productive members of the Army team.

Like the earlier studies that looked at the uniformed side of the Army, the civilian study found that Army civilians' commitment to the Army is not perceived as being reciprocated by the Army; performance

evaluations and counseling are inadequate; and current education and career development models are lacking.

Following work by an implementation process action team, which met April 15-17, the Army is currently considering a number of study recommendations. Those recommendations also include: creating a Civilian Education System that mirrors those of the NCO, Warrant and Officer Corps; placing civilian leader development responsibilities -- including funding -- under one Army organization; increasing formal developmental assignment, self-development and mentoring opportunities; and establishing an Army Civilian Creed.

The recommended Civilian Advisory Board comprised of Senior Executive Service members and General Officers serving on a rotating basis would help implement other approved recommendations, with the board president acting as a civilian workforce advocate to the Army chief of staff.

A summary of the panel's findings is posted on the Army Homepage at <http://www.army.mil/features/ATLDP-CIV/default.htm>.

Joe Burlas is a public affairs specialist with the Army News Service. **PWD**

Submit your articles and photographs to the Public Works Digest

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Bill Eng works on the Army Staff for the Assistant Chief of Staff for Installation Management (ACSIM) on the Utility Privatization and Energy Team in the Facilities and Housing Directorate. In addition to his utility privatization duties, he is the Army functional proponent for solid waste and recycling issues. Working with the Army Environmental Office and various offices in the Corps of Engineers, Bill helps shape the policy and program guidance for Army installations to meet their federal, state and local regulatory requirements. Drawing on his almost 35 years of federal employment, Bill puts out the "brush fires" and quick suspense actions that are the lifeblood of an Army Staff Action Officer.

ACSIM engineer donates kidney to wife

by Alexandra K. Stakhiv

On March 13, 2003, Bill Eng donated one of his kidneys to his wife, Sue. "A transplant is a treatment, not a cure," said Bill. "Sue will have to be on anti-rejection drugs for the rest of her life. She will also be more prone to infections now." But given the choice, they would both do it all over again.

A diabetic for 20 years, Sue's kidneys were failing for the last 4 years and she was referred to the Washington Hospital Center for a transplant and placement on the National Kidney Donor List last August. Simultaneously, she began to research what the uncomfortable and arduous process of dialysis several times a week would be like, if it came to that. The average wait for those on the donor list is about three years for a kidney.

During one of Sue's initial interviews at the transplant clinic, Bill had himself checked out, and amazingly enough, he was declared a "compatible" donor match for her. Most people don't realize that you don't have to be a blood relative to be compatible, he said.

Next, Sue and Bill completed a battery of tests to determine if he had two kidneys and that both would survive the operations. The doctors noticed a "funny" pulse in Bill and ordered one stress test, then another. Both pointed to a narrowing of one of his coronary arteries and an angiogram was ordered to verify and correct, if necessary, the problem. In the end, much to Bill's relief, and Sue's, he didn't need an angioplasty, which would have postponed the transplant already scheduled for the following week.

Since the surgery was to take place at 5:30 am, the Engs opted to drive to the Washington Hospital Center in Washington, DC, the day before and spend the night in guest accommodations nearby.



Bill Eng

"We had to fast and I kept dreaming about having a nice juicy steak," said Bill, knowing deep down it would be a while before that would happen.

March 13th arrived. The 4-hour-long surgery was a success and following the doctor's orders, they were both up and walking the day after, albeit painfully. Bill was released from the hospital four days later, but Sue had to stay a day longer.

"I found out that the hospital provides *living* donors a gourmet meal of their choice with all the trimmings served by a guy in tails," said Bill, "but somehow I wasn't very hungry and put mine off until the very last day." The thought of chewing on that "juicy steak" had lost its appeal and he settled on the softer salmon. He was still very sore and the hospital-provided "cough pillow" got a real workout during his stay. Nevertheless, on the sixth day, after staying one more night in the guest accommodations, Bill was able to drive Sue and himself home to Spotsylvania, Virginia.

They have been taking care of each other ever since. Bill recently returned to work part-time at the Humphreys Engineer Center for ACSIM's Facilities Policy

Directorate. When I met with him, he seemed like his cheerful old self, although I could see he had lost some weight. He continues to take Sue to the doctor for checkups several times a week, but that will become less frequent with time.

"Every person is different and you have to carefully weigh the many risks of transplant surgery against regular but time-consuming and very tiring dialysis treatments," cautioned Bill. "Not that it's been an easy road for us. For example, the doctors found a growth on Sue's pituitary gland just prior to the surgery, but we still feel lucky because there is medication available to help control if not shrink it."

There is no guarantee about the future but for now, all is right in Sue and Bill Eng's world. "I only hope this inspires more people to become organ donors," concluded Bill.

You may reach Bill at (703) 428-7078 or e-mail: william.eng@hqda.army.mil

Alexandra K. Stakhiv is the editor of the *Public Works Digest*. **PWD**



Army intern finds her way

by Jean Skillman

If you need to know where you stand, just ask Sara Henke. She'll let you know exactly where you stand...literally.

Using a Global Positioning System (GPS), Henke can pinpoint where you are located anywhere on the planet by longitude, latitude and at the near exact elevation you are standing.

"GPS is making the world seem even smaller than it is because it can give you exact directions and location accuracy even in the middle of a desert," said Henke, referring to the navigation system, used in Afghanistan during the war on terrorism and Desert Storm.

Henke, a graduate student at Shippensburg University in Pennsylvania, is completing an internship at Letterkenny Army Depot, Pa. where she is gaining hands on experience with GPS as she completes her Geographical Environment master's degree. She is also helping the Army to update the Letterkenny installation map as it prepares to turn land back over to the local community.

"Right now, I am using the GPS system to collect the specifications for buildings that have been built since the old map was made, and I'm adding the detailed dimensions to the database," she explained.

According to Henke, the information is added into a Geographic Information System (GIS), which assembles, stores and manipulates the referenced information. "By using the GIS we can layer the map so that a person can see what building used to be there, what facility is there now, and

from there track the environmental concerns," said Henke.

According to the U.S. Coast Guard navigation center, GPS was created by the Department of Defense (DoD) to be the primary radio navigation system for military land, sea and air support. It uses a system of satellites that act as reference points to calculate the distance to earth and measures how long a signal takes to reach a receiver. The result is the ability to give

easily navigate in unfamiliar territory; and according to Joe Petrasek, Letterkenny Army Depot's Restoration Program Manager, the possibilities for GPS and the GIS in the environmental arena are endless.

"To the Army's environmental program, GIS is value added. It can track sources of contamination by looking at the development of real estate and identifying the functionality of buildings," Petrasek said. "By tracking the activities that occurred at the contaminant sources, restoration needs are more easily identified, cleanup solutions can more quickly be established and tax payer dollars are saved," Petrasek added.

Petrasek's environmental vision recently earned Letterkenny the 2002 Secretary of the Army Environmental award for an installation.

Henke is the fifth intern to work under the program at the Environmental Office at Letterkenny. According to Petrasek, who initiated the program in 1999, the Army has benefited from the partnership because while the students are mapping out the installation, the office staff is free to do the more technical applications. The situation has proven to be a win/win situation for the students, school and the Army depot.

"The internship at Letterkenny is a good example of the community, university and the Army working together for the good of the greater community," said John E. Benhart, Ph.D., interim dean of the Shippensburg University.

Sara, a heart and lung transplant survivor, comes from an Army family dating back to the civil war. "I couldn't join the Army because of medical reasons so I was really excited about this opportunity with Letterkenny. I have been able to combine all of my passions - the environment, geography and military - into one." Henke said.

Jean Skillman is a Booz Allen Hamilton consultant supporting the U.S. Army Environmental Center Public Affairs Office. **PWD**



Sara Henke

each location on earth a specific address.

After the 24-satellite system reached full operational capability in 1995, one level of GPS service was opened for free public use in 2000. A second level remains encrypted for DoD use only.

The uses for GPS vary. DoD can identify a precise location for a military strike; civilians are putting it in cars and boats to



Digest profiles

Robert A. "Rob" Snyder: *Chief, Technical Review and Special Projects Branch, USAEC Cleanup Division*

Rob Snyder has been with the U.S. Army Environmental Center (USAEC) since 1990. He served as a project officer in charge of executing the Installation Restoration Program (IRP) at a number of installations. He then became involved in project oversight at several Army installations. Snyder served on the working group that developed the initial Restoration Advisory Board and Technical Assistance for Public Participation program guidance and helped the U.S. Army Corps of Engineers Pittsburgh District establish its civil works environmental unit.

On his return from his temporary assignment to Pittsburgh, Snyder led the Army's Peer Review/Independent Technical Review program through development and implementation. This program matured into the site-specific technical assistance program that exists today. Rob now serves as the chief of the Technical Review and Special Projects Branch in the Cleanup Division at USAEC.

Snyder received his B.S. degree in Chemical Engineering from the University of Pittsburgh. Prior to joining USAEC, Rob was a project manager in the Productibility Engineering Division at the Chemical Research, Development, and Engineering Center also located at Aberdeen Proving Ground, Maryland.

What duties do you have in your new position?

The Technical Review and Special Projects Branch has developed or manages a number of assistance and support mechanisms to enhance the cleanup program. These mechanisms have been implemented to ensure that technically and legally sound restoration projects are being implemented in the field and in an effective and efficient manner. Example mechanisms include performance-based contracting, Installation Action Plan Workshops, geology support to all restoration projects, the development and application of geophysical tools and analyses to restoration projects and site-spe-



Rob Snyder

cific technical assistance, including the Principles of Environmental Restoration workshop. As chief of the Technical Review and Special Projects Branch, my primary duties are to ensure that the appropriate assistance and support mechanisms are being utilized to resolve impasses and enhance the cleanup program; to coordinate these assistance mechanisms to gain efficiencies and assure a consistent approach is being utilized across the cleanup program; and to ensure that timely communication and coordination occurs within USAEC and with the installations so that the greatest benefit possible can be derived from the assistance and support mechanisms.

What are your goals?

My primary goal is to effectively lead the branch so that all of the assistance and support mechanisms can be integrated and used, where appropriate, to expedite site closeout and lead ultimately to restoration program completion. We must develop awareness of the broader cleanup goals within USAEC and across the Army's cleanup program of assistance and support mechanism. This awareness is essential to integrate these mechanisms into the total installation project team and to help installations develop their path forward.

What do you see as your challenges?

The Transformation in Installation Management (TIM) has led to substantial

and ongoing change both within USAEC and throughout the Army. A real challenge is maintaining an understanding of this change, how this change impacts the cleanup program, and more specifically, how any assistance and support mechanisms should be modified to adapt to change.

What are your first priorities?

First of all, I need to point out that the Technical Review and Special Projects Branch is a group of highly talented, innovative, creative, and motivated folks. I am grateful for each one of them. My first priority is to develop a working knowledge of all programs and projects in the branch. This is important for two reasons: first of all, this working knowledge is important in order to determine which mechanism (or mechanisms) is appropriate to use at a specific installation or on a specific project need. Secondly, a great deal of travel out of the office is inherent in managing these mechanisms. Therefore, I need to be in a position to serve as a second or backup at USAEC when the staff is out of the office.

Do you have any career advice for Army Environmental Managers?

Maintain balance in life. Take time to create and periodically reevaluate your career plan. Establish goals. Ask yourself (and seek to answer) the question of what activity you want to do and what position do you want to hold in the near future and farther down the road. Seek to answer these questions and take steps to pursue your goals.

Do you have any message for installations?

It is critical that each one of us understand that we are stewards of the environment and of taxpayers' dollars. Therefore, it is extremely important that each of us advocate for the Army to ensure that we are implementing risk-based, legally sound, and cost-effective remedies for every project that we undertake in the cleanup program.

PWD



<http://www.hq.usace.army.mil/isd/>
